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GLEANINGS IN BEE CULTURE

CONTENTS

MARKET QUOTATIONS.....960

STRAWS, by Dr. Miller.....967

PICKINGS, by Stenog.....968

CONVERSATIONS WITH DOOLITTLE.....969

EDITORIALS.....970

Use of Bee-stings as a Remedial Agent.....970
The St. Louis Convention; a few Sidelights.....971
Bee and Beer Exhibit at the St. Louis Fair.....972
Nominations for Officers of the N. B. K. A.....973

GENERAL CORRESPONDENCE.....974

The Laws Baby Nuclei.....974
The Use of Small Nuclei for Mating.....977
The Philadelphia Bee-keepers' Association.....978
Straws from the West Indies.....979
California Notes and Comments.....980

HEADS OF GRAIN.....981

A Chaff-Hive Apiary.....983
Hiving a Swarm on the Old Stand.....983
The 20-lb. Stone a Necessity to hold down Cover.983
Death of one of the Old Pioneers in Bee-keeping.983
Some of My Little Whims.....984
A Drone-laying Queen.....984
Bees and Rheumatism.....984
Keeping Ants away from Honey.....984
Age of Bees when going to the Fields.....985
A Raging Fire in a Bee Yard.....985
Keeping Bottled Honey from Leaking.....985
Honey-dew.....985
Questions Answered for a Cuban Inquirer.....986
Mammoth Sunflower for Shade.....986

OUR HOMES.....987

SPECIAL NOTICES.....997

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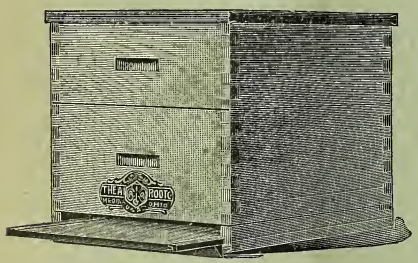

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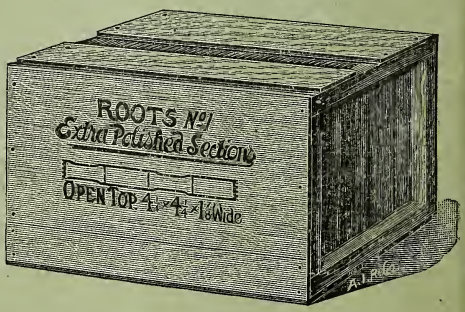

The A. I. ROOT Company,

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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

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MORE WOMEN than usual at the St. Louis convention. Good thing. [Yes, the more the merrier.—ED.]

SAINFOIN is having quite a boom in Canada, according to reports in *Canadian Bee Journal*. At the experimental farm, more bees were counted on the sainfoin plots than on any of the plots of other clovers.

S. E. MILLER, in *Progressive*, quotes a Straw which he challenges, to the effect that "the queen lays only worker-eggs the first year of her life." Bro. Miller, look again at p. 792 and you'll see that, instead of a Straw, that's one of Stenog's pickings that he picked from a German journal. You're right that the statement is a little off; at least, if you call it the rule, it's a rule with many exceptions.

T. K. MASSIE says in *Rural Bee-keeper:* "Our experience is that, when a second swarm issues, every virgin queen which is old enough to fly at the time the swarm issues will go out with the swarm." Not if there's to be a third swarm, Bro. Massie. I wonder just how it is when there's to be no more swarming. Perhaps somewhat mixed; sometimes going with the swarm, and sometimes remaining for a nice little battle in the hive.

J. A. GREEN wants to know my views as to overstocking and bee-keepers' rights. If he will read p. 928, first column, he will find my views pretty clearly expressed; and if he desires further expression upon any point I will gladly accommodate him. One thing is certain: If bee-keeping ever becomes as stable and reliable a pursuit as other lines of agricultural industry it will be when a man can feel just as sure of the pasturage for his bees as he does of the pasturage for his cattle; and that time will never come till he has some legal rights in the case.

SOMEWHAT STARTLING is the statement made by Mr. Doolittle, p. 925, that 9 Gallup frames, the equivalent of 6¾ Langstroths, are enough to "entertain the best queen to her full capacity as to egg-laying." Allowing ¾ of a frame for pollen and honey, and counting that the remaining 6 frames will be entirely occupied by the queen, that figures up only a little more than 2000 eggs as the queen's daily stint. Yet isn't it Mr. Doolittle who tells us that a queen goes as high as 5000 eggs in a day?

I INCLOSE a sample of the new foundation, called Columbus foundation, that is now having quite a boom in Germany. As you will see, it has a metal base, that is, a thin sheet of metal is in the center of the septum. The mate to this sample I put in the center of a brood-frame. It was drawn out and occupied by the queen with reasonable promptness, all but a little at the edge, where the bees dug the wax off the metal. At this date, Oct. 3, quite a bit more of the metal has been bared, and I suspect they will never again put wax on it. Possibly such a thing would not occur if a frame were entirely filled with it so that the bees could not have any bare edge to start upon.

[This kind of foundation is very much like what my father made along in the early 70's. He found that the bees, just as you say, would gnaw the wax from the metal, and then leave it bare. It was a conductor of heat and cold to an extent that, in cool weather, the bees seemed disposed to cluster on something that was warmer. The bees would draw it out into comb, a good portion of it; but when the metal was once bared it would stay so. But, outside of this, such foundation must necessarily be very expensive. There is no likelihood that it will ever be on the market any great length of time.—ED.]

TROUBLE in the Miller family. S. E. Miller, editorial writer for *Progressive Bee-keeper*, refers to a recent Straw quoting the ad-

vice from a foreign journal to leave queen-cells uncut and return after-swarms as fast as they issue, so that the young queens may fight it out and the fittest survive. He seems surprised that I did not protest against such advice—doesn't believe the best queen in the lot will come out victorious, and says: "In fact, I should think that just the reverse would be the fact; the best queen would be the one most fully developed as a queen, while the poorest would be the one least developed as a queen, and therefore partaking more of the nature of a worker and having a more fully developed sting, and therefore the more likely to be the victor in a battle royal."

Bro. S. E., your reasoning would be all right if some of the queens were not fully developed, and if workers were more powerful than queens; but I have always supposed that all queens in natural swarming are fully developed, and that a queen is more powerful than a worker; so if there should happen such a thing as a battle between a perfect queen and one part worker, I should expect the fittest to survive. It is a common thing for the young damsels to settle their differences by resort to the code duello, and it would have been a serious mistake on the part of Dame Nature to rule that the poorer should survive.

A SURE SIGN of laying workers is to find a queen-cell with more than one egg in it; at least I never knew but one exception to the rule, and that was a few days ago, when a normal colony with a normal queen had a queen-cell with two eggs in it. But laying workers may have a dozen eggs in a queen-cell. I feel almost sure that laying workers prefer queen-cells to lay in because a queen-cell is a more comfortable place. I once saw a laying worker backed into a worker-cell, and her wings were pushed up about her ears in a manner that must have been very uncomfortable. Next to the queen-cell comes the drone-cell for comfort. I've seen cases where eggs were laid by laying workers in worker-cells just as regularly as a good queen would place them, and no mortal could tell by the looks that laying workers were present so long as no brood was sealed; but that was because no larger cells were available. If in doubt in any case, look sharp for a queen-cell cup or a drone-cell. If you find one of these in the brood-nest with more than one egg in it, that settles it—laying workers. But if you find one or more of them in easy reach with nothing in them, while worker-cells are occupied, you may feel easy that a queen has done the work—all of which is easily explainable on the theory that, the larger the cell, the more comfortable it is for the laying worker. And I may add, by way of postscript, that a queen-cell within reach will have more eggs in it than any other kind of cell. [While I would not argue that there was only one laying worker at a time, would it not seem to indicate that there was only one in the case cited where the eggs were laid as regularly as those by a queen? If there were more than one, there would have been some patchy work and a plurality of eggs in one cell.—Ed.]

Mr. Lukomski says in the *Bulletin*, the organ of the Tunisian Bee-keepers' Society, that the poison of bees is capable of counteracting the effects of fever even more effectually than quinine, a few stings arresting malaria or intermittent fever of the worst type. Wasps, hornets, bumble-bees, and all the hymenoptera, have the same power.

Centralblatt, as quoted by the *British Bee Journal*, says Mr. Zince has succeeded in wintering a colony of bees without combs to cluster on. "The hive was placed in an attic above a room that was well heated, and the colony was fed with liquid honey. Up to March the bees had not built any combs. It has become a good colony during the season."

Mr. Dickel, a well-known German bee-keeper, made the following experiment as reported in the *British Bee Journal:*

He cut a hole in one of the combs of a hive and inserted a piece of comb with the eggs it contained, taken from a wasps' nest. The experiment was repeated thrice, and every time it produced a curious commotion among the bees. In approaching it the bees stopped dead, as if fascinated by the strange substance. Their antennæ were extended forward with feverish movements. They then dashed upward and spun around madly. This was soon followed by others who joined in the unrestrained dance. By degrees some of them got over their fear of this strange object, and approached it with their trembling antennæ extended and flapping their wings, and still continuing their comical dance. At length they decided to risk an attack, and tore the nest into shreds, evidently with repugnance. They were more undecided about touching the eggs, but these they also attacked at last, crushing them with their mandibles. They seemed thoroughly disgusted, and showed it by getting rid of the egg-shell as quickly as possible with their front legs.

On page 793 I made reference to the strong effort that is now being made in Great Britain to get a foul-brood law passed, similar in nature to what we have in this country. A great deal of correspondence has reached us relative to the struggle, which I can not explain here; but it seems the trouble in the way is not so much the objection on the part of the government as it is on the part of some bee-keepers who would willingly suffer the loss of all they have rather than help their neighbors and be well paid for it. I take the following extract from the *Irish Bee Journal*, the editor of which seems to be doing all he can to secure so wise a measure. As an example of selfishness it is quite unique:

We have just heard of a case in which an obstinate owner "is keeping a district infected," and who said to the local expert who offered to treat the bees free of charge—"I know nothing about the disease, and I don't want to. I don't care about my neighbors' bees. I have no intention to trouble myself, and I won't allow any one to touch my hives."

The matter has been hotly discussed in the *British Bee Journal*, but I do not understand that the editors of that paper are unconditionally opposed to a foul-brood law for England—I hope not. If no repressive measures were used in this country, foul brood would be almost universal; whereas it now cuts but little figure, and that in small spots. The plague is thoroughly licked here.

HAVING THE BEES BUILD STRAIGHT WORKER COMB FROM NARROW STRIPS OF BROOD FOUNDATION, AND AT THE SAME TIME GET A CROP OF SECTION HONEY.

"How long have you been in the bee business, Mr. Doolittle?"

"I commenced keeping bees in the spring of 1869, or 35 years ago last spring. But why did you wish to know, Mr. Green?"

"That was before the advent of comb foundation, was it not?"

"Yes."

"Could you get your combs built straight in the frames before you used foundation?"

"Not at first, till I learned how."

"Thinking that you might have tried to get straight worker comb built without the use of comb foundation was the reason for my asking you how long you had been in the bee business. And now I want you to tell me just how you worked for straight worker combs before the days of foundation, as I wish to prepare my frames for next year during the fall and winter, thus having them all in readiness for use next season. I tried a few colonies at comb-building last summer, and got a lot of crooked combs, quite a share of which was of the drone size of cell."

"As a starting-point toward straight comb we used to stick strips of worker comb to the under side of the top-bar to the frames; but as a strip of worker-comb foundation half an inch wide is much more preferable, I should certainly purchase enough foundation for this purpose."

"How do you cut the foundation into these half-inch strips?"

"I pile half a dozen sheets together, then lay on a straight-edge, having a block under each end of the right thickness, so that only enough pressure will come on the foundation to hold it in place, the most of the pressure coming on the blocks. Without these blocks the foundation would be smashed together so as to injure it."

"That solves one of my troubles, for in trying to cut more than one sheet at a time I have jammed the side walls to the cells all into each other. How about the cutting?"

"Having all fixed ready, take a very thin table-knife and grind it very sharp. Soak a rag with kerosene oil, and then draw your knife across this rag once or twice before you try to cut the foundation. Then with a quick motion draw the knife along the straight-edge, not bearing on too hard. If you draw it quickly enough the friction caused will warm the knife and cause the kerosene to lubricate it so that you will have a smooth perfect cut, the edges shining like glass after the cut has been made."

"Well, that is a kink worth knowing, for I have always about mauled mine off. Now, how do you get it on the under side of the top-bar of the frames where you wish it?"

"The first thing you want is a lamp, a tin dish, a spoon, and some wax or paraffine. Put the tin dish over the lamp and the wax, and spoon in the dish. When the wax is melted, turn the wick of the lamp up or down, as the case may be, till you are able to keep the wax a little above the melting-point all the while."

"I have always melted wax over the kitchen stove; but I can see an advantage in this way of having things just where I wish them, and in regulating the heat. This will help me in many ways."

"Besides this wax part you will want a light board having a handle on it, a little larger than your frame, outside measure. Near one edge of this board you will nail a strip about two inches wide, that is a little shorter than the inside of your frame under the top-bar, and a little less than half the thickness that your top-bar is wide, so that, when your frame is laid on the board, and the under side to the top-bar pressed up against this strip, your half-inch strip of foundation will come just in the center of the bar to the frame, when the foundation is laid on this strip and placed up against the under side of the top-bar. Do you see how this is done?"

"Yes, I can see that part."

"Now drive two nails part way in, just at the edge of the board your frame lies on, and in such a place and shape that, when you lay your frame against these nails, it will slip right up to the strip the foundation is to be laid on, without any holding or trouble on your part, further than to drop in the frame. Do you get that?"

"Yes."

"Now make two more boards like the first, and fix all three on your bench so that the top-bar to the frame and the foundation, when in place, will form a V-shaped trough, one end of which is to be considerably higher than the other. We are now ready for our work of putting on the strips of foundation which are to be the comb-guides. Drop the frame in place. Lay the strip of foundation on the narrow strip of wood, and

press it up against the under side of the frame till it touches all the way, thus making a joint that the melted wax will not run through, when you will pour enough wax in at the upper end of the trough from your spoon so that it will flow all along to the bottom end. Put the spoon back in the melted wax; fix frame and foundation on the next board, and pour the wax in at the upper end of the V-shaped trough again. Then do the third one in the same way, when the first one will have the wax all cool, and the guide stuck fast, ready to be lifted out and placed in the hive where it is to remain. Now put in a frame, fit up your foundation strip and pour in your wax, where this first frame has been removed, when your second frame is ready to be lifted off and set in the hive. In this way you can put on these guide-strips faster than I am doing the telling how."

"Well, that is simple after you know how."

"This, as you will notice, not only secures the combs built straight in the center of each frame, but also starts the bees with building cells of the worker size."

"Yes, I see. But is that all you have to do to get them completed all worker comb?"

"No. And I can best tell you the rest by supposing we are putting a swarm in a hive having nine of the started frames. Suppose we hive a swarm in such a hive this forenoon. Two days later I open the hive, and usually find that the bees have made a start on five frames; but if they have not, I leave five in the hive just the same. The other four frames are now taken out, and a dummy taking the place of two frames is set on either side, so that we have the five frames in the center of the hive. I now take the sections from the old hive from which the swarm was taken, and, after putting them over these five frames, the hive is closed. This throws the full force of the bees on these five frames and in the sections, and they will soon fill these five frames with straight worker comb, and have them filled with brood; for in thus fixing things the bees are incited to the rearing of worker brood below, while the honey is being stored above. This also gets the bees into the sections as soon as may be, and we secure a good yield of honey of the choicest kind."

"But, why did you not put on the sections when putting the bees in the hive?"

"Had I done this the bees and queen would have gone up into the sections as far as possible, and the queen commenced her brood-nest there, unless we had used a queen-excluder under the sections. And, even with the queen-excluder, had the bees commenced work in the sections while on the parent hive the queen would have tried to get in the sections, and work in the frames below gone slowly, with not nearly so nice combs."

"After the five frames are filled, what then?"

"I generally leave things thus till the harvest of white honey is over, when the hive is filled out with combs from some of those tiered-up colonies I tell about in the February 1st GLEANINGS for this year. If we try to have the bees build more than these five combs, we shall have no trouble in getting them straight, because they can be no other way, if we set an empty frame between two full ones; but we shall have trouble with the bees building drone comb, if we try further. Therefore I prefer to fill out the hive with combs already built; and in the absence of such, use frames filled with wired foundation for completing the full number of combs to the hive."

"Well, I thank you for this interview. Good morning."

"Good morning."

OUR boys have about discarded the use of excelsior or sawdust for fuel, including planer-shavings. We are now burning in our smokers little square blocks of basswood that we get out of the kindling-pile. One of our Jumbo Corneils filled will last all day with such fuel. Mr. Bingham has long advocated hard wood cut up in small pieces. Our wood is soft, or semi-soft, and we prefer it because it burns a little better. Then it lasts long enough for all practical purposes.

USE OF BEE-STINGS AS A REMEDIAL AGENT.

IN the spring of this year, Wm. A. Selser, of 10 Vine St., Philadelphia, who has charge of the apiary on the roof of that building of The A. I. Root Co., was called upon by the Associated Press reporter for information regarding the use of bee-stings in medicine. He called just at a time when Mr. Selser was putting up 10 pounds of bees in alcohol for a large drug company in Philadelphia. He seemed intensely interested in the subject, and was very particular to know what they were used for, and also the stings, as Mr. Selser also had an order for 15,000 stings to be supplied the coming season, to be extracted and placed on sugar. This reporter called at the office of the Philadelphia Drug Co. to inquire in what way these stings were used in medicine. He found they were used not only in preparations with other solutions for rheumatism, but in cases of diphtheria with other solutions, and some other diseases.

He returned to the roof apiary, took a number of photographs, and wrote up quite an article regarding the same, and sent it to four or five of the leading papers of the United States. From this Mr. Selser was deluged with inquiries and reporters from different papers and magazines; and as it is customary for a magazine to enclose a check

for any article on any subject they wish written, in order to economize they sent their reporters to write it up from what information they could get in an off-hand way. They took notes from Mr. Selser's replies, and from this wrote their papers, with the result that some of the most ridiculous articles were written regarding the subject, some of them without the least foundation of fact.

Mr. Selser has been experimenting with a rubber mat, as he terms it. This is a gelatin substance like rubber, in which the bee could insert its sting and not extract any of the fluid, in order to get the price of the sale of these stings to such a figure that large orders might be taken. A number of the papers conceived the idea, for the sake of notoriety, that the supply was not equal to the demand, and many bee-keepers have written Mr. Selser to get him to share some of these orders with them, etc. He has written us that the demand is very limited, and it is a question of development in the future whether the sale of the same will be increased very much or not.

We have sold from our New York office two pounds of bees that are to be put in a preparation for restoring the growth of hair on bald heads, the party claiming he will use several hundred hives for this purpose if this preparation sells, as he fully expects it to sell, claiming it is no experiment any longer, as the same substance by which he places the live bees so preserves the medicine, and aids it to do its work.

As this party has paid money for the bees, we presume he thinks, at least, there is something in this discovery; but we have our doubts.

A number of people have written Mr. Selser, and some have already come to the Jenkintown apiary to be stung for rheumatism, so that Mr. Selser has made a price of $2.00 for the first application and $1.00 for every subsequent application.

For the cure of rheumatism there have been some quite remarkable reports of a very favorable character. Mr. Selser, in a recent letter, in referring to this writes:

> When I had lumbago, seven or eight years ago, I paid Dr. H. C. Wood, our specialist in that line, $50 for the advice of telling me, when he knew what business I was in, to go home and sting myself twenty-five times in the lumbar muscles of the back. There is no question that bee-stings, as well as bees in alcohol, are now being used, and have been used for many years, of which I have sufficient proof, in many different ways, in medicines and medical preparations.

THE ST. LOUIS CONVENTION; A FEW SIDE-LIGHTS.

WHILE this was not by any means the most largely attended meeting of the National Bee-keepers' Association, it was, perhaps, the most representative. The place of meeting, in the very heart of the United States, and the big fair, drew bee-keepers from every portion of the country, with the result that there were 28 States represented, and two foreign countries—Russia, which had sent its accredited representative, Mr. Abram Titoff, who for nearly two years has been studying American methods at Medina, and Mr. Glen Moe, Candelaria, Cuba, a bee-keeper of prominence and standing in the new republic.

Mr. J. U. Harris, the president, made a model presiding officer—the best, I think, we have ever had. He is a strict parliamentarian, and gave the bee-keepers of the convention an example of how strict parliamentary methods could facilitate discussion, and yet give every speaker the opportunity of the floor.

It will be remembered that at the Los Angeles meeting a year ago we had an "irrepressible conflict" to deal with, with the result that one of the sessions was marred by the spirit of war. At the St. Louis meeting there was an almost entire absence of any thing of that kind, notwithstanding representatives of both factions were present. Those who had fought so bitterly on the floor of the convention at the previous meeting now joined hands and worked together in perfect harmony. True it was, there were slight outcroppings once in a while of the old war spirit; but it no sooner came to the surface than it disappeared.

One of the wags of the convention, Mr. E. W. Whitcomb, of Friend, Neb., in commenting on the peace and harmony that prevailed at this meeting, whispered to me during one of the sessions, "Ernest, we had vinegar at Los Angeles. We are having sugar here; and now say—do you—do you suppose we shall have flies at the next place of meeting?"

But there will be no flies, no matter where we go. The old hatchet is buried, and honied sweetness, without flies or vinegar, will be in evidence.

It was a little comical at times, but another kind of "war" was going on during the sessions of the meeting—the great Boer war, within about half a mile of the convention pavilion. The roar of the heavy field-pieces, the bursting of bombs, the rattle of the high-powered rifles in the hands of a thousand soldiers, and the drumming of several Gatling guns, made such a din and uproar that the speakers were obliged to suspend for a few minutes until the noise of battle ceased. No sooner would they resume than again the boom of cannon and the rattle of a thousand pieces would stop proceedings. (By the way, the Boer war is worth going to see.)

There was present at this meeting the venerable Dr. G. Bohrer, of Lyons, Kansas. He was present at the early meeting of the old North American, at Cincinnati, when Hetherington, Quinby, Langstroth, Gallup, A. I. Root, H. A. King, Mrs. E. N. Tupper, and other bee-keepers of olden times, were flourishing at their best. He was active at the early conventions, and served to link the past with the present history of the Association in that he took a lively interest in the proceedings of this meeting.

The convention took hold of the question of the alleged manufacture of comb honey in a way that will mean much to the bee-

keeping interests of the country. But, unfortunately, a "cog slipped." A committee was appointed to prepare a statement for the press, and secure its insertion in some of the leading St. Louis dailies. The statement was telephoned over to the night editor of the St. Louis *Republic*. Imagine the consternation of the bee-keepers the next morning when a brief item came out, to the effect that the members of the great international convention, in their session at the Christian Endeavor hotel, just outside the fairgrounds, were divided in their opinion as to whether comb honey was manufactured or not! You can believe this produced a buzz of protest at the next morning's convention. A vigorous resolution, prepared by a committee, denying absolutely that comb honey was manufactured, and offering a reward of $1000 for evidence of such manufactured honey, was passed by a tremendous *viva-voce* vote, every one rising to his feet. A committee was appointed to wait on the editor and secure a corrected statement. It made several attempts to get together, but failed, and finally Mr. E. T. Abbott, a member of this committee, called on the aforesaid night editor, and gave him a "few facts." The next morning the following statement came out:

BEE-KEEPERS OFFER REWARD; CLAIM THEY CAN NOT BE DECEIVED BY MACHINE-MADE HONEY.

Delegates to the National Bee-keepers' Association, which has been in session at the Christian Endeavor Hotel since last Tuesday, devoted their time yesterday to the discussion as to whether it is possible for comb honey to be manufactured by machinery.

On account of the fact that the public press has from time to time published statements to the effect that this has been done, and thereby causing people unacquainted with the making of honey to take same as an accomplished fact, a committee appointed by the convention adopted the following resolution:

In view of the oft-repeated statement in the public press that comb honey is made, filled, and capped over by machinery,

Resolved, That the National Bee-keepers' Association will forfeit the sum of $1000 to any party or parties who will furnish proof beyond successful contradiction that said statement is true, and produce as part of such evidence two pounds or more of such comb honey that has been manufactured without the use of bees in any way, with sufficient skill to deceive ordinary honey experts.

E. T. Abbott,
Ellis E. Pussler,
E. Kretchmer,
M. A. Gill.

This was very fair, except that the matter had been doctored by the aforesaid editor in a way that was not at all to the taste of Mr. Abbott and the members of the committee. Still, the item as a whole was very good, and is probably as good as we could expect under the circumstances from the average newspaper man.

A feature of the convention that was very convenient and much appreciated was the putting of large numbers on the coat or waist of each member when he registered. The entire list was then printed, with the name and postoffice opposite the corresponding number. Each member was then furnished a copy for reference. Sometimes we would forget who such and such a man was; but a glance at his number and a comparison of the printed list would show instantly who he was and where he lived. In the same way the stenographer could easily identify each speaker on the floor. Later on, Mr. Hutchinson took a picture of all the members, and of course these numbers will tally with the printed list below the picture. All together, the number feature was a great convenience, enabling us to get the right name to each face, and thus get better acquainted.

There were very many interesting discussions and papers at this convention; and I will endeavor to give in our next and subsequent issues a condensed report. But it will repay well every reader of this journal to send $1.00 to General Manager N. E. France, Platteville, Wis., and secure a verbatim report of the whole proceedings, which will be issued in book form in a couple of weeks. This dollar will not only entitle you to a full report, but also to all the benefits and privileges of the National Bee-keepers' Association. Even if you do not expect to get any very great pecuniary benefit, remember that the dollar turned into the National will mean a great good to the bee-keeping interests of the country. This organization is not only a sort of protective association, but it looks after the interests of its members in a hundred different ways, and no bee-keeper can afford not to be identified with such an organization.

BEE AND BEER EXHIBIT AT THE ST. LOUIS FAIR.

It is a matter of regret that the bee-keeping interests of the country were treated somewhat shabbily by the management of the exposition. Strong efforts had been made to have all the exhibits in Agricultural Building along with other allied industries. A fine location was laid out, and at one time there was a reasonable prospect of securing it, but the management gave this space over to the bee(r) instead of the bee business. As a natural consequence, the exhibits of bees and honey and bee-supplies were scattered all over the grounds, miles apart and in obscure places. Many bee-keepers came away without seeing a single exhibit relating to their chosen pursuit.

The A. I. Root Co.'s exhibit (the only one of its kind) was put in an out-of-the-way place over into the basement of Horticultural Hall, a building that is clear over to one corner of the grounds. This basement is very rarely visited by sight-seers, and, all together, the location was most unfortunate. Our representatives made a vigorous protest, and finally secured a small space in the same basement next to Senator Swink's exhibit of bees, honey, and beeswax. The A. I. Root Co. was given no definite information as to where it could have its exhibit in the first place, and was not able to prepare a booth that would be in keeping with other exhibits of its class. As a natural result, the display was rather commonplace as compared with those made at other expositions. Senator Swink, in spite of his being pushed off into the basement, had a most magnificent dis-

play of Colorado honey and beeswax. We have made arrangements to secure a photo of it, and hope to present it in GLEANINGS at some later date.

In Agricultural Building there were several displays of honey and wax made by several of the States. There was one exhibit of wax in the form of a magnificent piece of statuary that was finer than any thing I had ever seen. This I hope to present to our readers at another time.

In the Japanese pavilion there was a Japanese hive, some chunks of beeswax, and some bottled honey. Beyond these I did not see any other honey exhibits.

If the bee-keeping industry could have been given a quarter of the space allotted to some of the minor industries we could have made a fine showing; but it seems the management, rather than give an industry represented by over half a million bee-keepers in the United States, and whose total output is something like fifteen millions of dollars annually, gave the space that we ought by rights to have had over to the liquor interests. And, by the way, there was beer everywhere at every restaurant; and Agricultural Building itself, the largest building that has ever been constructed in the world for exhibition purposes, contained most magnificent displays of bottled liquors. So numerous were these displays that one would almost think that the great Agricultural Building was mainly liquor and nothing else. Beer was the only cheap thing on the grounds. It was in evidence everywhere. At several of the booths I could get milk or a cup of coffee for 15 cts., or a mug of beer (which I did not order) for 5 cts. Many drank beer as a matter of economy in place of coffee or milk. As if it were not enough to have the liquor interests represented all over the grounds in the form of magnificent beer-gardens and drinking-booths, in which men, women, and children drank *ad libitum*, there were immense beer-pavilions and beer-gardens just outside of the grounds. At one of the gardens (I don't remember whether it was just outside of the fairgrounds or not) a certain bee-keeper I know, whose word can not be questioned actually counted over 2500 people drinking beer at one time, seven-tenths of whom were girls. This state of things in this enlightened country is disgusting to a large class—certainly the *better* class—of people in this land; and I hope the like of it will never be seen again in or around a great world's fair in the United States.

A. I. R., while listening to the above, which I read from my manuscript, remarked, "What shall the harvest be as a consequence of teaching young girls to drink beer in this wholesale way, especially when these young girls get to be the mothers of future generations that are to hold and save this nation of ours?"

NOMINATIONS FOR OFFICERS OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

It will be remembered that the Board of Directors of the National Bee-keepers' Association authorized the General Manager to issue a call, in August, for postal-card nominations from the members, indicating the preference of the writer for suitable persons to fill the offices to become vacant in January next. According to the ruling of the Board, these card nominations were to be counted Oct. 1, by the General Manager and one other member of the Board of Directors, and that the two men receiving the highest number of votes for their respective office were to be considered candidates for such office, and to be published in the bee-journals at once. In accordance with that ruling, the General Manager has appended a list of the offices to become vacant, and of the nominees suggested. The two highest are given in the first column. But the General Manager, in conversation with me, stated that he thought it better to give all the other names that had been suggested for each office. The following, therefore, will explain itself:

PRESIDENT. TWO HIGHEST. J. U. Harris. C. P. Dadant.	Others voted for—Dr. Miller, G. W. York, A. J. Cook, A. I. Root, E. T. Abbott, W. Selser, G. M. Doolittle, R. C. Aikin, E. W. Whitcomb, R. Taylor, H. E. Hill, W. Z. Hutchinson.
VICE-PRESIDENT. C. P. Dadant. J. F. McIntyre.	Others voted for—Geo. Brodbeck, G. W. York, Dr. Miller, G. M. Doolittle, W. L. Coggshall, J. Hall, J. U. Harris, E. R. Root, W. McEvoy, O. L. Hershiser, J. Johnson, H. Moore, W. H. Laws, W. Z. Hutchinson, H. H. Hyde, R. C. Aikin, F. Greiner, F. Fouch, E. T. Abbott, W. Selser, F. Benton.
SECRETARY. W. Z. Hutchinson. Geo. W. Brodbeck.	Others voted for—W. H. Laws, S. A. Niver, L. Scholl, E. T. Abbott, G. Davidson.
GENERAL MANAGER. N. E. France. L. Scholl.	
DIRECTOR—To succeed E. W. Whitcomb. E. W. Whitcomb. H. H. Hyde.	Others voted for — F. Muth, H. E. Hill, J. F. McIntyre, G. Brodbeck, W. Z. Hutchinson, J. A. Green, J. Heddon, A. J. Cook, E. Pratt, W. Alexander, H. Mendelson, A. Carmichael, W. Stolley, E. Gannson, M. Dearby.
DIRECTOR—To succeed W. Z. Hutchinson. R. L. Taylor. J. Q. Smith.	Others voted for—W. Z. Hutchinson, G. Brodbeck, F. Muth, M. A. Gill, W. L. Coggshall, G. W. York, E. Secor, C. P. Dadant, H. Surface, J. Rouse, E. S. Lovesy, W. Cary, J. U. Harris, H. Mendelson, C. Stewart, E. Alexander, F. Rauchfuss.
DIRECTOR—To succeed U. Toepperwein. U. Toepperwein. E. S. Lovesy.	Others voted for — Dr. Miller, H. H. Hyde, J. Q. Smith, E. T. Abbott, F. L. Aten, L. Scholl, E. R. Root, F. Brown, W. H. Laws, W. O. Victor, H. S. Ferry, F. Benton, E. J. Atchley, W. O. Victor, G. Dittmer, H. Lathrop, Emma Wilson, C. Stewart, L. Stachelhausen, E. Atwater.

All nominations were counted Oct. 1 by N. E. France and E. F. Nehls, as per order of Board of Directors. (The above names are in same order as the number of votes received.) 160 members enrolled at St. Louis.

THE LAWS BABY NUCLEI.

How the Bees of one Colony can be Used to Fertilize from 100 to 200 Queens; how to have Queens Mated to Select Drones; a Valuable Article.

BY W. H. LAWS.

Ten years ago it was thought that there was not much more to be learned about modern bee-keeping; but note the rapid strides in the lines of specialty, in the production of honey, the management of large and numerous out-apiaries, and in almost all lines pertaining to our pursuit.

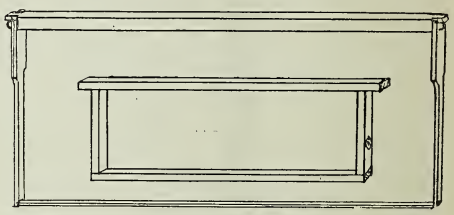
By the request of the editor I come bringing some new ideas on the wholesale mating of queens, a plan that will admit of thousands of queens being mated where only hundreds could be mated by the old methods now in use. By this plan I claim that any one colony of bees can be used to care for, and allow the fertilization, of from one to two or more hundred queens. Other advantages are:

1. It will permit of the use of virgin queens from five to seven days old, with practically no loss.
2. There is no loss from absconding.
3. We avoid all trouble from fertile workers.
4. We can control the mating of our queens to an almost absolute certainty.
5. We can proceed with the production of honey; and in order to raise large quantities of queens we are not compelled to break up into nuclei so many of our best colonies of bees as is done by the methods now in use.

For the past two seasons I have been practicing with great satisfaction to myself a method possessing all these advantages, and I think I can tell it so plainly that any bee-keeper who understands practical work in the apiary can use it. In the next place, we do not use any permanent nuclei, but we do use a lot of little baby nucleus boxes that contain a single comb of honey each. These boxes, when empty, weigh only a few ounces each, and the combs of honey that are made to fit these little boxes are 11¼ inches long by 4¼ deep, and are made purposely to hang crosswise in an eight-frame half-depth super.

After counting the virgins in our nursery-cages we prepare an equal number of the little boxes by placing a comb of honey in each of them; then we proceed to shake all the bees from the combs of some queenless populous colony, being sure to cause the bees to fill themselves with honey, placing the combs, when shaken, in an empty hive, and setting on the old stand to catch the returning bees, and to care for the brood. Now pick up the hive containing the bees, and repair to some convenient shady spot, where our boxes are waiting to receive the bees.

With a small tin cup dip from the cluster a small wad about the size of an unhulled walnut, which I think will not exceed about 200 bees; now let your assistant open and hand you one of the little boxes; pour the bees from the cup right into the box and on to the comb of honey; close the box; snap the hook; lay aside, and proceed dipping and filling until all the boxes have been filled.

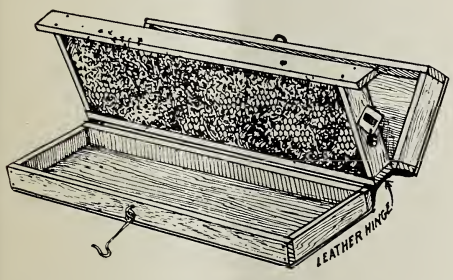


RELATIVE SIZES OF THE LAWS NUCLEUS FRAME AND THE STANDARD LANGSTROTH.

By this time the bees in the little boxes have discovered that they are confined, and every bee that can take on more honey has filled its sac to its capacity, from the comb on which it is confined, and they are now buzzing and roaring, seeking if possible to make an escape. It is while in this condition that we are ready to introduce the virgins, for a queenless over-gorged bee, frightened and away from her own home, is in very poor condition to sting, ball, or even notice a queen; but, on the other hand, judging from the general acceptance of these virgins, I imagine that some of those heavy-laden bees would begin to offer her honey at once. Introduce the virgins by running them in at the little ⅜-inch round entrance to the little boxes; but right here is an important point about the introduction of those virgins. Since my article on this subject in the *Review* of last March I have received dozens of letters making inquiry as to what time these virgins should be given. I will try to make this point plain.

Those bees, realizing their confinement, filled with honey, and their only idea that of escape, all the fight is taken out of them. They are roaring their song of distress; their excitement is at its highest. Right at this period *any sort of queen* can be given, and, ninety-nine times out of a hundred, she will be accepted. As to the length of time that should elapse after filling the boxes before the queens should be given, they can be run in after ten to thirty minutes of confinement. I usually wait until all the boxes are filled, even should there be two or three hundred of them before the virgins are given; but in no case wait over night, as one of my men did on one occasion, and lost 71 out of 72 queens.

Some years ago I discovered that almost any kind of queen would be accepted, provided she was given *immediately* after the bees have discovered their *confinement*. On one occasion, while making increase with strong three-frame nuclei taken from the strongest colonies with laying queens a number of virgins were taken from a colony that had swarmed and were holding back their virgins. These were hatching, and strong enough to fly, yet every one that was thrown into these nuclei was accepted, and at the proper time was found laying. I have also shaken bees into the baby nuclei from the upper stories of strong colonies, with a queen below the excluder, and after twenty or thirty minutes introduced virgins with safety.



THE OLD-STYLE LAWS NUCLEUS BOX OPENED UP.

We will now return to the little boxes where we left them with virgins all run in. They should be left lying in the shade until near sunset of the next day. By this time the bees have quieted down, the queen being one of them, and the honey from their sacs has been deposited in the cells, and they may now be hauled several hundred yards out of danger of robbers, the entrances opened, the little boxes scattered out through the brush, hung on the wire fence, lodged under or up in the forks of the trees, in any position, any side up, only be sure they are in the shade. These little nuclei, when distributed, with their virgin queens, behave very much like newly hived swarms. Every bee seems to regard that box as its home. A few bees will be found on guard at the entrance.

If the virgins are of the proper age, we may expect them to mate the very next day after setting them out. After the third day the little buttons may be turned until the zinc queen-excluding slot is across the entrance, and our queens are now safe, to be used at pleasure.

When another batch of virgins is ready our little boxes may be carried in, queens caged, and all the bees may be either returned to the hive from which they were taken, or they may be all put together on a new stand, and hived like a new swarm, allowing one of the queens to be shaken in with them. A frame or two of sealed brood from some colony that can spare it is given, and soon we have a colony of bees.

As I have told you how to mate a large number of queens by using the bees of only one colony, and also how to introduce virgins of any age with safety, I will now show

HOW TO AVOID LOSS FROM ABSCONDING.

It is a noticeable fact that a strong nucleus or a weak colony of bees will abscond much sooner than a weak nucleus with a bountiful supply of honey on hand; and when this absconding occurs it is usually after the queen has been mated and preparations have been or are being made for a perpetuation of their home. It is then, if their room is too large, their stores scant, or after brood-rearing has begun, that unrest and consequent absconding begins. With our little boxes and fat combs of honey the bees busy themselves moving the honey, clearing up a place for a brood-nest, and secreting wax with which they build spurs of wax from the comb to the walls of their box.

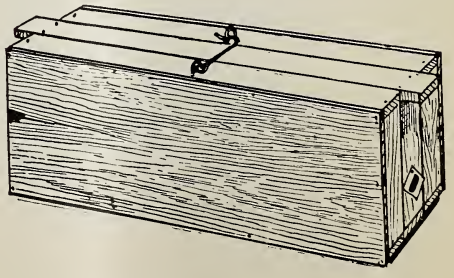
With these conditions they seem content, and it is very seldom desertion is known; but absconding is absolutely prevented when the queen-excluding button is turned. I have tested large numbers of queens as to purity of mating in these little boxes.

Now as to the prevention of fertile workers. There is no possible show for them to exist when a new lot of bees are used with each mating of the queens.

HOW TO HAVE QUEENS MATED TO SELECT DRONES.

The fifth and last proposition is that of the controlling of the mating of the queens.

These baby nuclei are so transportable that 500 or more of them can be loaded on a wagon together with our hive of choice drones. Then we go out on the prairie three miles or more from any bees, set out the little boxes, and liberate the drones. If the queens are of proper age they should mate the same or the next day, after which they may be brought in and the bees and queens of another race may be mated on the same ground.

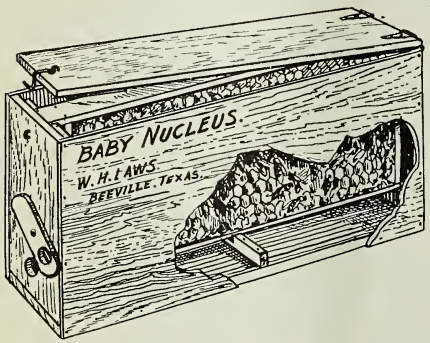


LAWS' OLD-STYLE NUCLEUS BOX.

I will now describe the construction of the little boxes, which, you will see, is a very simple arrangement.

Two little trays, $\frac{3}{4}$ inch deep, hinged together at the bottom with leather strips in such a way as to clamp between its edges a

frame so tightly that it can not move the box closes with a hook and staple at the top, and the outside of the frame now becomes a part of the box. A $\frac{5}{16}$ or $\frac{3}{8}$ inch hole is bored in the frame near one lower corner of the frame for an entrance for the bees, as seen in the cut. While I have used this style of box almost exclusively for a year and a half, there were several disadvantages that I have tried to overcome in the construction of a later model. I made some 300, several months ago, of a pattern that I like much better, as it entirely encloses the frames containing the honey, and it has a tight-fitting water-proof cover. The frames fit in these boxes in such a way as to be tight-fitting, and can be hauled or handled any side up or in any position, as do also the other boxes. The principal objection to the old style of box was its bee-smashing qualities, its liability to take water in heavy rains, and its comb of honey being so near the outside that it afforded a greater attraction to ants and robber bees.



LAWS' NEW-STYLE NUCLEUS BOX.

On each of the boxes is placed a little queen-excluding button, one end solid, and, when not in use, is turned so the queen can mate. One end is used to close entirely the entrance; the other to confine the queen after mating to avoid any danger from absconding. There is a hook and staple attached to each of the little boxes that closes with a snap and holds all tightly and securely until released.

To get combs filled with honey, and to have them so as to be conveniently worked on the hives, frames of proper dimensions were made to fit crosswise in an eight-frame half-depth super. Second-quality combs, and those containing much drone comb, were cut out from the standard frames, and transferred into the little frames, 13 of which just fill a super, and an L. comb will exactly fill four of the baby-nucleus frames. These supers of combs are then set on any populous colonies, to be filled with honey.

I have 750 boxes of the old pattern, and 300 of the new model. I have also a thousand of the little combs of honey. With these I think it would be easy to mate two or three thousand queens per month.

Last season I used nursery cages and virgins exclusively; but I have found it more convenient and labor-saving at times to attach the ripe cells right on to the combs of honey just before the bees are poured into the boxes, then let them stay 48 hours before carrying out to the mating-grounds.

It is not always a necessity to change the bees with each mating of the queens. Ripe cells may be given as by the old method; but this would destroy the rapidity of wholesale mating, as it is intended the plan shall do. For good queens and quick work I favor the introduction of virgin queens from five to seven days old. When virgins are used we can select and throw out all scrubs before introducing to the baby nuclei.

My nursery cages are so constructed that two holding 20 compartments each are placed in an L. frame, and are so pivoted that the top of the cages remains right side up, no matter in what manner the frame is held. These 40 compartments are covered on the sides with wire screen, and the top of each is covered with a small waxed wooden cap to which the cell is attached; a $\frac{3}{16}$-inch hole is bored a half-inch deep in the bottom of each of the cages, which are coated with beeswax and filled with honey from a common clean oiler, to which the young queen may help herself as needed.

These nurseries containing cells are hung in upper stories of populous colonies containing laying queens, as queenless bees will select one or two, and worry the others to death; while colonies with laying queens will pay no attention to the virgins. I have a select mating-ground just half way between two of my breeding-yards. One yard contains 65 colonies, and the other 150. These yards are only two miles apart, and, although robbing may occur in or about the yards, and at times it might be dangerous to lift a few covers, yet I have worked half a day at a time, at this mating-ground, combs of honey exposed nearly all the time, but not a comb has been robbed nor have I seen a robber. This item of working with a seclusion from robber bees is worth much.

Are there drones at the mating-grounds? Yes, on afternoons I have heard the noisy fellows, and seen them in great crowds, evidently attracted there by the great number of queens; and I believe that a queen seldom leaves the mating-ground to find her mate.

On one occasion I left by accident a number of queens caged until 18 days old. I saw that a number of them had mated within two hours after distributing the nuclei one hot afternoon.

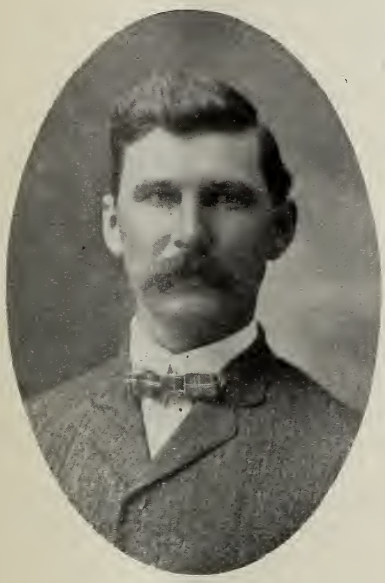
I have picked up these freshly mated virgins, and thrown them in hives from which I was taking cells, and in a few days found them filling their combs with eggs.

I can not see but there is as good a catch of fertile queens from the baby nuclei as from those of larger dimensions.

Last November 57 matured cells were given to as many nuclei, and they were hauled 15 miles to mate to special drones. I caged 51 queens from this lot.

Out of 338 baby nuclei placed on the mating-grounds at one time the latter part of June, I took 270 laying queens. Several queen-breeders have written me that they are testing this new method, and report successfully.

Mr. E. A. Ribble, of Roxton, Texas, writes me that, with the very first effort, he put out 25 baby nuclei and secured from them 25 laying queens.



W. H. LAWS.

The advantages of this new method are apparent. Queens can be mated by the wholesale, with few bees and little breaking-up of good colonies of bees; but by the old method many strong colonies had to be sacrificed in order to raise a few hundred queens. Now we use the bees of one or two colonies to mate hundreds of queens, and after their use for a few days they may be returned to the colony from which they were taken.

Beeville, Tex., Aug. 6.

[The honey-producer must not get the impression that there is nothing of value for him in this article; for, indeed, he can now, apparently, fertilize his own queens at comparatively small expense and trouble, and, what is more, select his best drones for the purpose; and right here Mr. Laws comes pretty nearly, if he does not quite, solving a big problem—one that has puzzled bee-keepers for years.

The fact that our friend has had in successful use a thousand of these baby nuclei is a strong argument in favor of their practicability. This article will bear careful reading all through, as well as the following.—ED.]

THE USE OF SMALL NUCLEI FOR MATING.

Brood not Essential.

BY E. F. PHILLIPS, PH. D.

That small colonies of bees, not exceeding 200 in number, will care for a queen during her mating period is now a fact beyond dispute. Queen-breeders have used this method in an experimental way for some time, and generally ended by condemning the method; but of late there has been a revival of interest in this system, due mainly to the efforts of Mr. E. L. Pratt (Swarthmore). Mr. Pratt has used the small nuclei in his own yard with marked success, and has advocated the use of the system in the face of considerable opposition. Any one who says that the system will not work must either doubt the veracity of Mr. Pratt and others who do succeed, or acknowledge that he does not know enough of the habits of bees to make this system a success. Now that the A. I. Root Co. has been using the small nuclei, as had been reported in GLEANINGS; and since Mr. Laws, Mr. Weber, and others have been successful, it seems that the old full-frame queen-mating nucleus must now take a back seat.

The use of small nuclei requires considerable care, and, above all, no little knowledge of the habits of the bee. With a larger (two or three frame) nucleus any one can introduce a virgin queen and have her mated unless he does something so absolutely unnatural that the bees die; but with smaller nuclei, unless the bees are in proper condition the results will be poor. If this statement be considered by any one as an argument in favor of larger nuclei, then it is misinterpreted, for I do not care to advocate crude methods in apiculture. In the care of bees, every move of the bee-keeper must be founded on the natural habits of the bees; and unless he knows those habits well he will get results only *in spite* of his labors and not as a result of them. In small nuclei, as nowhere else, the queen-breeder must know his reasons for every move. Bees do not adapt themselves to unnatural surroundings and circumstances to any great degree, and therefore it is imperative that all things be in accord with their instincts. Having had the pleasure of seeing Mr. Pratt use these small boxes for some time I venture to give his methods. There is a reason back of every direction, for Mr. Pratt is a most careful observer, and knows his bees as few men do.

The ideal size for a mating-box, according to Mr. Pratt, is one that will hold two frames of a size to fit six to a standard frame, so that they hang sidewise. These frames may be made of section stuff, and hung to the hive-cover by hooks. The style of box, etc., is a matter of little import; but it is quite necessary that the *frames* be in some way interchangeable so that they may be put in large colonies to be filled with honey; and if of the size indicated, this may be easily done. It is best not to have any projecting

corners on the frames, for these would prevent their being placed in a large frame.

To make up colonies it is best to use bees that have just completed a batch of cells, for such bees are normally ready to have their queen mate. This is not necessary, however. Put a small teacupful into each box, close them for six to eight hours, and then run in a virgin in each box. At evening remove the nuclei a mile or so, and open the entrances. Nuclei may be made up in an outyard, and brought to the main yard. After one day's flight the nuclei may be brought back to their old yard, without fear of their return to the old hive. Mr. Root says that these nuclei must be confined three days, and that was the method used at Medina while I was there; but this other method saves two days' time, and is a little less severe on the bees. Any queen may be introduced to bees that have been confined for six or eight hours, without the use of a cage.

To equip the small hive, use one frame filled with honey or syrup, and one frame with a triangular piece of foundation to keep the bees busy. After the first queen is mated and removed it may be necessary to feed. An ounce of feed every day or two will keep the bees working, and queen after queen may be mated from the same box until finally the original supply of workers becomes reduced, when it is necessary to make up the box again. Each queen will lay a few eggs in the box, and the supply of workers will thus be kept up; but I do not believe that any brood is necessary. In all the time that I was at Medina the small nuclei worked without brood; and while unsealed larvæ may be of advantage in keeping the bees in the box, yet I doubt if it is at all necessary that they be present.

To introduce a second queen in the box after a laying queen has been removed, close the entrance for six to eight hours; run in a virgin, and open at evening. By this method no introducing-cage is necessary. If desired, an introducing-cage may be built in the cover of the hive, as was done at Medina while I was there, or any of the numerous introducing-cages may be used.

I am glad to read in GLEANINGS that the small nuclei are not robbed. There is absolutely no reason why they should be, for bees with a queen will protect their hive, no matter how small their number.

The editor of GLEANINGS is to be commended for the stand he takes against the use of smoke on these nuclei; for if smoked with clouds of smoke from a smoker they will naturally be discouraged. Might it not be as well to carry over the same directions regarding smoke to the manipulation of larger colonies? How any one can expect bees to behave naturally after being treated to smoke as they often are is past comprehension.

To a bee-keeper the question naturally arises, "Will these nuclei pay?" In the first place, the cost of a small box with two small frames is very little as compared with a regulation hive with its frames; but granting that the bee-keeper has the hives, the question of relative expense is easily settled. If any one will consider the amount of honey that could be obtained from a large colony of bees in one season, and then think that, if these bees are divided up into two-frame nuclei, that surplus is lost, the waste of large nuclei is evident at once, One good colony will easily make 30 or 40 miniature nuclei, and still leave a good-sized nucleus for testing a queen, and that, surely, is a great saving of dollars and cents.

In the second place, when once the small nuclei are in use they are infinitely easier to handle, and much time is saved in finding the queen, in feeding, and other things which all colonies need. It is to be expected that there will yet remain many bee-keepers who will still refuse to believe that small nuclei are practical, simply because they themselves can not make them work; but I for one would scarcely care to take their word for the usefulness of the system after the evidence which I have had of the results that can be obtained.

Philadelphia, Pa., Aug. 26.

[We have found since our first report that brood is not necessary. Indeed Mr. W. H. Laws at the St. Louis convention made the statement that the "babies" were better without it.—ED.]

THE PHILADELPHIA BEE-KEEPERS' ASSOCIATION.

Meeting Held at The A. I. Root Co.'s Apiary at Jenkintown, Pa., Sept. 10, 1904.

BY F. HAHMAN, SEC.

The weather was ideal for the occasion—warm and quiet, the sun partially obscured, with occasional gleams of bright light—a day to make both visitors and bees feel contented and happy.

The apiary was lately established, with much care and expense. The grounds have been laid out on the terrace plan, and appeared very attractive to the eye, with nicely kept lawns, and beds of cannas and other flowering plants, including a bed of large "flowering goldenrod." The colonies were strung along in straight lines, the hives neatly painted white, the whole presenting a pleasing and attractive piece of landscape.

The meeting was opened by electing Dr. L. M. Weaver chairman, the president and vice-president being absent from the city. The secretary read minutes of the previous meeting, which were approved as read.

Mr. John B. Parks was elected to membership. Mr. Wm. A. Selser, as The A. I. Root Co.'s representative, made an address of welcome. He stated that this apiary was for the benefit of all bee-keepers in the eastern part of the country, to demonstrate to them the advances made in apiculture from time to time, as improvements are introduced in bees and apicultural accessories and appliances, and to see that visitors are cordially invited to take advantage of the

facilities thus accorded them for study and observation. Mr. Selser said that new races of bees from all over the world would be tested in this apiary, to determine whether they possess any characteristics of value to bee-keepers at large. He also stated that the colonies now on the ground were only a starter, and the number would be largely increased next season.

The meeting was now suspended to enable those present to see the bees. Hives were opened, and combs exhibited by Mr. Harold Horner, Mr. Selser's assistant. There were five colonies of bees with imported queens from Italy, of the leather-colored strain, three-banded. Mr. Selser also had a queen of the golden-to-tip variety under a magnifying-glass. He next gave a brief summing-up of the great expansion of the bee industry, now only in its infancy, but destined to become one of the important industries of the world.

On reassembling, Dr. E. F. Phillips, of Philadelphia, was called on to address the meeting on some of his observations of bee-life. Dr. Phillips made an able response, giving the results of his observations on the division of labor among bees. As his observations on this subject were published in GLEANINGS, p. 846, it is needless to go into particulars here. Dr. Phillips' remarks were listened to with much attention, and were greatly enjoyed by those present.

Mr. Selser gave an address on the good work accomplished against the adulteration of honey, and the strictness of the pure-food laws when applied to the sale of honey containing even the slightest admixture of foreign matter whatever. He cited cases in which he had acted as chemist in analyzing samples, and had invariably detected the forgeries, however slight.

A discussion was started to determine the amount of honey consumed by one colony during the summer season, aside from the surplus gathered. Many of the members expressed their views, although none were backed up by actual tests. The consensus of opinion seemed to favor about 150 lbs.

Overstocking was next discussed, in answer to a question from one of the bee-keepers present. No satisfactory answer was forthcoming, because none of the members were bee-keepers of any magnitude. The secretary gave some reminiscences of the address delivered before the association about a year ago by Mr. Moore, of Arizona, in which Mr. M. had stated that overstocking had occurred in his location in the irrigated alfalfa district.

Mr. John M. Hooker, of Philadelphia, late of England, was called upon to give his views. He said that bee-keeping in England is very different from that practiced in the United States. He said that their apiaries are small, but more numerous than in this country, consequently there could be no overstocking. Mr. Hooker also referred to his visit to the large apiaries of California.

The next question discussed was the quantity of honey produced around Philadelphia.

Mr. Mark Schofield, of Philadelphia, said that a good average for the southern section of Philadelphia is about 80 lbs. per colony; sometimes, in good years, 200 lbs. would be produced. The meadows south of Philadelphia produce vast crops of fine light honey in the fall of the year.

Mr. Geo. Cullom, Spring City, Pa., about 30 miles northwest of Philadelphia, considered two supers of comb honey (48 sections) a good average. Mr. Harold Horner said that 50 to 60 lbs. per colony has been the average with him in Mt. Holly, N. J. He has had as high as 150 to 175 lbs., all extracted.

Mr. Selser said 50 lbs. is considered very good for North Philadelphia.

Mr. E. L. Pratt, of Swarthmore, Pa., was the next speaker. Mr. P. said that, two years ago, he gave a talk and demonstration before the association, to show how queens were forced to lay eggs in his artificial queen-cell cups. Since that time he has found that queens would lay eggs in the cups from choice. He found that young queens, after mating, would invariably lay eggs in the cell cups from which they had hatched. In one instance he had taken up bees into the swarm-box, to remain for six hours, and had taken up their queen with them by mistake. He found that the queen laid eggs in 32 of the cups, thus proving that she must have taken them for natural cells. Mr. Pratt also exhibited his new shipping-case for nuclei. It is a model for light weight and cheapness. It is constructed of pasteboard, such as is used in making book-covers; is nailed over a skeleton framework of wood, with wire gauze over both ends, and a space of 1½ inches at these ends for these bees to cluster in. A neat handle is attached over the top, the whole package resembling a suit-case used by travelers. These cases are handled by the express messengers with the same care that suit-cases are handled, and, in fact, are stacked in the cars with the other suit-cases, never on their sides, handle always on top. Mr. Pratt has successfully shipped nuclei to Europe in this package. He has also made hives of this material, and wintered bees in them successfully during the late cold winter.

Eight candidates were nominated for membership in the association.

A vote of thanks was tendered The A. I. Root Co. and its manager, Mr. W. A. Selser, after which the meeting adjourned.

STRAWS FROM THE WEST INDIES.

BY W. K. MORRISON.

There is a popular notion that honey is a specific in the treatment of consumption. Recent discoveries tend to establish the truth of this. Dr. Weber, a German authority, regards levulose (or honey) in conjunction with other means of treatment in the light of a specific. He recommends 4 to 6 tablespoonfuls with every meal. In the

initial stages of consumption this is successful in the majority of cases. The result is due to the levulose oxydizing into a form of carbonic acid. Paste this in your hat, and credit *Therapeutische Monatshefte.*

The fact is well known that honey is good for infants, particularly those who do not seem to thrive satisfactorily. If honey (or levulose) be given, the increase in weight is as much as 300 to 400 grams per week. For this purpose it is superior to milk sugar, and it is sweeter and more palatable. It is no less valuable as a nutrient in the case of older children. So says Furst, in the *British Medical Journal.*

Subscribers to GLEANINGS who live in the tropics, and who have not read Mr. C. E. Woodward's article on Cuba, p. 700, should make haste to do so. It is just right for other tropical countries as well as Cuba—perhaps more so.

Concrete sugar is the best for feeding bees, as it contains the natural wax of the sugar-cane, and is free from all chemicals.

Porto Rico will lose its trade in sugar with the bee-keepers of Europe who used to feed its muscovado sugar. The sugar-estates are being made up-to-date to produce white sulphuric-acid sugar. Amen!

Of the large islands in the West Indies, Porto Rico is the most backward in the matter of bee-keeping. As the colony has been under the American flag for some time, this seems the more remarkable.

Peru has probably more apiaries of stingless bees than any other country. The honey from this source is thought to be superior to any other for medicinal purposes. It seems very probable that the Incas had these bees under domestication for ages before Columbus.

The nearest modern apiary to the equator is away down on the Corentyn River, on the confines of Surinam. The proprietor is a Belgian named Franck.

Comb honey has been shipped from Trinidad to England, where it arrived in first-class condition, and realized fair prices. This is a record, so far as the West Indies is concerned.

The honey season in the tropics is the dry season. It rains too steadily in the wet season to allow bees to gather a surplus. In Trinidad the honey season extends from January to June; in British Guiana the period is July to December, though the distance which separates them is only 200 miles. Here is a good chance for migratory bee-keeping if transport becomes cheap.

Mr. Powell, the former genial curator of the St. Vincent Botanical Experiment Station, who takes a lively interest in bee-keeping, has taken charge of a station far away in British East Africa. As there are plenty of bees in that country, probably he will soon start an apiary having all the latest appliances, as an object-lesson to the savages of that region.

The Canadian commercial agents having investigated the subject, report the British honey market preëmpted by West-Indian and Chilian honey. This is good, as the Canucks levy a very high tariff on West-Indian honey. It is a poor rule that doesn't work both ways. If Canada won't buy our honey we won't buy hives up there—so there!

Buenos Ayres, with 800,000 inhabitants; Sao Paulo with 350,000, and Rio de Janeiro with 400,000, ought to be good markets for honey, as the people have the cash, and are not averse to eating nice foods. These cities are not behind North-American places in general appearances. Beeswax is eagerly sought for to make church-candles.

Around Bogota, E. U. Colombia, are large areas of alfalfa, which readily accounts for the ease with which honey is secured in that locality. Wheat and other temperate crops are also grown to perfection, which makes living cheaper than elsewhere in Spanish America.

The ackee fruit-tree is an excellent bee-plant; and where common, as in Demarara, it ought to prove a fruitful source of honey. Mammee sapote is also a fair producer, but not equal to the ackee.

A kind of borage is an excellent honey-producer in Trinidad and other West-Indian islands, and might with advantage be introduced elsewhere.

So far as the tropics are concerned, cypress is much superior to pine from almost every point of view, more particularly for its lasting qualities. A hive-stand made of pine is of little use in moist countries with heavy rainfalls—that is, 60 to 150 inches per annum.

A good many tropical bee-masters would appreciate a recipe for making honey-cakes similar to those made of sugar and shredded cocoanut. They can not have solid honey, for obvious reasons; but a honey-cake would suit if it is cheap and good. The pickaninnies of the West Indies have a very sweet tooth that must be gratified; and with a "mamma" to tote the cakes around, the sale problem is simple.

CALIFORNIA NOTES AND COMMENTS.

Honey Consumption; Redwood Hives; Baby Nuclei, etc.

BY W. A. H. GILSTRAP.

When reading a paper I frequently mark points of special interest with a blue crayon. GLEANINGS gets many such marks, and my ideas on some of them may be of interest.

Page 188, to kill a skunk I take a pole somewhat heavier than a fishing-pole, and whip the animal to death on short notice, on a moonlight night. Lately I dispatched two fine skunks in less than three minutes by this process.

Amount of honey used by a colony (page 376) will never be known. The quantity fed a colony during a dearth is no test, as, during a flow, owing to more exercise, bees use much more honey. In this country they evidently use over 100 lbs. per colony on an average.

It is my belief that lizards kill bees (page 658); but as they are timid they would rather watch the apiarist than kill bees in his presence. It could be expected that a lizard would lap a bee up as quick as a flash or not at all. They often take refuge in a hive, and are frequently found dead there—probably stung by the bees. For several years I have killed them on suspicion.

On same page there is a report of two queens in one cell. Frequently, when grafting with very small larvæ, I could not be quite sure that the larva was landed safely, and another one used, which has resulted in two larvæ being kept in the cell for several days. While I never knew two queens to mature in one cell, it is not surprising that it should occur.

Pages 687, 688, twenty-pound stones, or stones of any weight, could hardly be as handy here as to put a brick on a hive. They are a convenient weight to handle, and heavy enough to hold the lid. It pays to have a weight on hives where only flat covers are used. With the wind we have here, shade-boards are out of the question unless the apiary is in a protected locality.

Pryal's article, Aug. 1, reminds me of some unpainted redwood hives which I used for kindling four or five years ago because they were an undesirable size and shape. If my recollection of their history is correct, the older ones were in use before the 1862 flood, and the newest ones were made about 1863, and they might have lasted 70 years longer. The corners were put together in ordinary box fashion, and had kept in much better order than some comparatively new Dovetailed hives that I once handled that were made by one of the largest bee-supply firms of the world. The old hives had never been handled much; even the frames had been at rest nearly all the time.

Such hives, however, are not able to stand the rough usage that pine can. This is especially true of the frames. The delicate "ears" of a Hoffman frame would not do at all if made of redwood. But I never saw a Hoffman frame that I cared much for, any way.

Had p. 798 reached me before I tried the baby nuclei, perhaps the puzzle would have been too much for me. It doesn't seem possible to make a success of them with brood in the comb.

As I had been using combs $4\frac{3}{4}\times7$ inches—four to the hive—it was natural enough to use the same comb for the baby nuclei. No brood was used. So far as tried, they were a success; but a more extended use might change matters. The bees were confined one day, and were brought from an outyard. Little honey was coming in at the time, and none of the "babies" were fed. They look too contemptibly little to be worth smoking, and one can almost grin so small an establishment into submission.

One thing more about the little "fixins." As some of the bees insisted on getting in the joint of the hive (my first trial was from Mr. Laws' write-up in the *Review*), I tried some made like a regular hive (smaller of course), and closed it by placing a small stick on each side of the top-bar after the frame was in place. This simplifies construction, and suits me better in use.

Modesto, Cal., Aug. 29.

SELLING AMBER COMB HONEY FOR WHITE CLOVER; THE DAMAGE SUCH PRACTICE DOES TO THE COMB-HONEY BUSINESS.

Why is it that some honey which is said to be white-clover comb is of a golden yellow color? Others which I raise myself, and know to be white-clover honey, is a pure white. Is it true that some people feed molasses to their bees, and that makes the yellowish effect? I have tasted both kinds, and there is a decidedly different taste between them. I sold a crate to a grocer here, and in a few days went in to see if he had sold any, and if he had heard how his customers liked it. He told me that one lady came back and said that she positively could not eat it. I don't know why, for I surely have not had any other complaints like it. The grocer said that it was not white honey, and showed me some from the country, which was yellow. He called it white-clover honey. I suppose his customers had been so used to getting molasses-fed honey that, when they did get the real article, they did not know it. Of course, I will not say that the yellow-white honey is molasses, as I do not know, and am asking your advice with regard to it. I know, as I said before, that the honey which I raised is from white clover, and it also looked white too. What made me angry was that the grocer said it looked like paraffine comb, or manufactured honey. H. F. CARL.

Washington, D. C.

[Regarding your question I would say that white-clover honey, strictly speaking, is white honey. Of course, it is not absolutely snow-white, but it is as white as most honey. Comb honey of a golden yellow may be a mixture of white clover and some other source. There is a carelessness on the part of dealers (perhaps it is dishonesty) in some cases in selling off grades of honey as white clover. People buy it, it does not taste like the white clover they have had before, and they conclude that it is manufactured.

I do not believe there is any one feeding bees molasses to get sections of comb honey filled out. If such persons were dishonest enough to do a thing of this kind there would be more "method in their madness."

BARNUM'S CHAFF-HIVE APIARY, KINCARDINE, ONT., CAN.

They would feed granulated-sugar syrup, which would give a white honey rather than an amber. There is a great deal of poor comb honey on the market — that is, amber and dark; and some of it, we are sorry to say, is sold for white clover. This is one of the things that help to keep these canards going.—Ed.]

A CHAFF-HIVE APIARY.

Broadway apiary is owned by me, and is run for extracted honey by my wife and myself. It consists of 230 hives, mostly two-story Langstroth frames, using excluder and a set of honey-comb kept for the honey every season exclusively. I never keep queens over two years old. They are all clipped, and a record kept. We control increase by putting back as far as possible. My wife was induced to come out and help me in the apiary, partly for want of health and partly for her help; and the outdoor exercise has built her up so that she outweighs her husband at present. We have mastered the winter problem, and I may some time give our experience along this line.

C. W. Barnum.

Kincardine, Ont., Aug. 27.

PLURALITY OF LAYING OR FERTILE WORKERS IN A HIVE AT A TIME.

In Gleanings of January 1, 1904, I came across the following: "If any one else has seen a plurality of fertile workers in the act of laying, I wish he would hold up his hand." Well, right here I stop and hold up both. I had two hives that went wrong; and on looking for the cause I found traces of laying workers; after a while I caught them in the act, killing as many as 20 at a search, and on examination I found in every case an egg ready for laying. In one hive I took as many as 27 eggs from one cell, and in the other hive as many as 34; what comb they did have was covered with cells full of eggs, many of them having eggs stuck on the sides and top, and, what is more, I have taken as many as 5 larvæ out of one cell. Some of the eggs hatched out into fine drones. I have fixed one hive all right, having got a new queen reared, but am having a job with the other, which has reared an unfertile queen out of 13 fine queen-cells. What remedy is there? Geordy.

Shanghai, China, June 24.

HIVING A SWARM ON THE OLD STAND; WAS IT A FAILURE?

I made an error at swarming-time this year which will probably result in the loss of a fine colony; and, while it is likely that many have had the same experience, there may be some whom my mistake would benefit.

The most up-to-date bee-keepers here hive their swarms on foundation on the old stand, and set the unfinished super or supers on the new swarm at once. This I have done for two years, and it has always worked nicely, as the bees would finish the sections quickly, go to work in the brood-nest, and, if the flow continued, become a fine colony in a few weeks. This year I hived a swarm as above, and set over two half-filled supers. The queen went "up-stairs" immediately and began to lay, and I soon had 56 sections containing a mixture of honey, brood, and pollen. The queen is still in the sections, and there is not a drawn cell on the foundation starters below. I will see that they have plenty to winter on, put them in the cellar, and, if they live, will shake them out in the spring and build them up. I see plainly now that the plan of setting the supers on the new swarm is all right, only it should not be done until the brood-nest is established. C. G. Francis.

Marion, Ohio, Sept. 20.

[One swallow doesn't make a summer, neither does one failure show that the plan was necessarily wrong. While, perhaps, it is safer to use full sheets of foundation in the brood-nest instead of starters, yet in the great majority of cases hiving on starters and putting supers on immediately does not force the queen into the sections. As a rule, queens don't like to lay in small shut-up compartments like sections.—Ed.]

THE 20-LB. STONE A NECESSITY TO HOLD DOWN THE COVER.

That 20-lb. stone is necessary, for we must have something to hold the covers on until the bees get them stuck fast. There may come up a strong wind right after you have had a hive open, and off goes the cover. I have tried it, and I have no cloths under the covers. I use bricks, which are as handy as stones to have on the covers. I can turn them in so many ways to indicate the condition in the hive that I don't know how I could get along without it. It is right before you all the time, and beats the book. When I get to the beeyard all I do is to look at the bricks, and I know then what to do. Daniel Danielsen.

Brush, Colo.

[A brick is all right to hold covers on where there are liable to be strong gusts of wind. If it is heavy enough, why have a 20-lb. stone? It is the big back-breaking stones that, it seems to me, must increase the labor of a bee-keeper in the height of the season enormously.—Ed.]

DEATH OF ONE OF THE OLD PIONEERS IN BEE-KEEPING.

I have learned with deep regret of the fall of another of God's noblemen. Our friend and brother in apiculture, J. A. Golden, of Reinersville, Ohio, died Lord's day, Sept. 11, leaving a wife surviving, deserving of and to whom our sympathy is extended.

Addison, Pa. J. G. Hartzell.

[Mr. Golden will be remembered as the inventor of a section-cleaner, illustrated on p. 386, 1898. At this time, much attention was paid to that matter, and J. A. Green refers

to it in last issue. Mr. Golden added a good many practical ideas to bee-lore, and we regret his loss.—Ed.]

SOME OF MY LITTLE WHIMS.

The best brush to use among bees is a wing from a hen or a hawk, or any bird not too large or too small. A right-hand wing is preferred.

The best scraper for removing wax or propolis is a shingling-hatchet, not too sharp, and without a handle. Such a tool is just right for weight and shape.

The best smoker fuel that I can get is old dry cow-chips. They burn steadily, and make plenty of smoke.

To start a smoke I have a box of primers. To prepare the primers I take old calico, and make patches about four inches by six, and tie a loose single knot in each one, leaving the ends projecting for quicker lighting; then I soak them in saltpeter water, not too strong, and lay them up to dry. When dry they are easy to light with a match, even in a wind. When lighted, drop it in your smoker and pile in the fuel.

I must relate a little of my experience that to me, at least, was surprising. I was holding in my hand a piece of brood comb. I saw a young queen cut herself out of a cell. She then walked a few steps and put her head into a cell of honey and commenced drinking, and almost at the same instant she commenced piping. Both operations continued without either one interfering with the other. J. A. Barber.

Chuluota, Fla.

[The idea of having primers, or having the fuel itself made ignitible by the use of saltpeter, while not new is valuable. Dr. Miller uses rotten wood that has been soaked in saltpeter water, and dried. W. L. Coggshall uses old phosphate-sacks rolled up and tied. These rolls are just large enough to go into the smoker-barrel, one end being dipped in saltpeter water to facilitate igniting. It is my opinion, based on the experience of our men, that this old phosphate-sacking is one of the best fuels that has ever been suggested. It ignites instantly, and gives a lasting and pungent smoke.

A queen or bee does not emit sounds by means of the mouth for it is not a breathing organ as with us but an orifice through which food is received. It was at one time supposed that the noise was produced by the wings, because a very rapid vibration of them can be noticed; but if the wings are cut off close the queens can pipe just the same. Just how the sound is produced is not yet definitely settled.—Ed.]

A DRONE-LAYING QUEEN.

I have one colony of bees that has a drone-laying queen. She lays a few eggs in two different brood-frames so that there is sealed brood all the time; but I can not find the queen. I dare not buy a queen lest this drone-layer kill her. How am I going to get rid of her? There is not honey enough in the hive to winter the bees, but there is more than I want to waste on them. Can I shake them in front of a hive where there is a laying queen, and have them received if I make the bees in both hives smell alike?

Will the drone layer be apt to kill a valuable queen? Mrs. J. B. Blakely.

Neenah, Wis., Sept. 27.

[A colony with a drone-laying queen should be removed immediately. The bees, what there are of them, less the drones, should be united with some other colony. It may be advisable to use a little tobacco smoke to prevent fighting; and if the queen is a valuable one she should be caged, although the probabilities are she would not be molested. —Ed.]

BEES AND RHEUMATISM; AUTOMOBILES AND HORSES.

I am now 77 years old, and have handled bees almost all my life, as my father kept bees ever since I remember. I was not only stung by honey-bees, but wasps, hornets, and yellow-jackets. About two years ago I hived a swarm of bees, not having gloves on; and in shaking down, the bees dropped on my bare hands, and they stung me terribly. Every few days through the summer I get stung by bees, and yet I have the rheumatism so badly that my fingers draw all out of shape, and I have rheumatic pains almost all the time.

In regard to the "mobile," those people who are so terribly afraid of them must not come to Lansing, for there are about 40 in use in the city; you meet them almost everywhere, and I have heard of no horse running away yet on their account. Women and even young girls run them in the city and country. When the factory is completed they will turn out about 35 finished machines per day.

In regard to using an auto to go to church on Sunday, I think it is more humane and Christlike to bring your auto in play than to hitch up your horses and drive them four or five miles and let them stand two to three hours in the hot sun for the flies to torment. Of course, I do not believe in taking business or pleasure trips on Sunday with any vehicle.

Lansing, Mich., Oct. 5. Isaac Parker.

[There are different kinds of rheumatism, and different individuals are differently constituted. We have had favorable and unfavorable reports regarding the value of bee-stings for rheumatism, so that we must conclude they cure some and not others. See editorials in this issue.—Ed.]

HOW TO KEEP ANTS AWAY FROM HONEY WITH TANGLEFOOT FLY-PAPER.

Ants will not put their feet on tanglefoot fly-paper. Put pieces three or four inches square under each table leg, or two or three sheets under the lower super of honey when you are stacking them up, and ants can't get into the honey or reach any thing on the table. J. L. Hyde.

Pomfret Landing, Conn., Aug. 20.

HOW OLD MUST BEES BE TO GO TO THE FIELDS?

I think, with Dr. Miller, that the notion that bees must be at least 17 days old to be of any value during a honey-flow is a mistake. When a colony has been queenless for some time, there is always a rapid increase in the number of field-bees as soon as the new brood begins to hatch, long before any of the young bees can appear as outdoor workers. I requeened several colonies under just those conditions this year, and watched them closely after the twenty-first day. I confess I was rather surprised to see the field force just about double in the next ten days. The explanation is, of course, that some of the older bees are kept at home to do the housework, and are released for field duty as soon as young ones hatch to take their places.

Mr. Phillips' contention, that young bees stay at home because they can not see to go to the field, may be all right. But why is it that bees five days old will gather pollen when there are none older in the colony? They will do that, I am pretty sure.

Newman, Ills. C. F. BENDER.

A RAGING FIRE IN A BEE-YARD.

I write you these few lines to let you know how well a good stock of your red-clover queen I got of you behaved during a fierce fire that almost wiped out my apiary Sept. 10. It broke out in an adjoining storage-shed of a paper-mill, which burned with such rapidity that I could not remove the bees, as it was about noon when the fire broke out. In a few minutes some of my strongest colonies were on fire, the covers burnt off, and the combs in the top stories were melted and the bees suffocated. There were thousands in the air when the firemen arrived; but I went with them and instructed them not to upset with the stream the hives, which they did not, and none of the firemen were stung, nor spectators. I am sorry I could not get you a photo; but the next day the remaining bees cleaned up the honey that was left, and this week I have got them in shape to try bee-keeping again, as I have had experience with flood in my apiary; but I would rather have six floods than one fire. It is surprising what heat some colonies can stand, and survive. Your queen survived the fire. I harvested my crop in July, which was very good. The bees were not insured.

Bridgeport, Pa. WM. H. EARNSHAW.

A TRICK WORTH KNOWING ABOUT KEEPING BOTTLED HONEY FROM LEAKING.

In keeping extracted honey in Mason or other self-sealing glass jars there is always some trouble from leakage or "creeping" of the honey over the edge of the jar. This soon spoils the neat clean appearance of the jar, besides making the handling of it disagreeable. I think I have discovered a cure for the trouble—at least one that works satisfactorily with me. I have not given it publicity, mainly because it may not work well in careless hands. Here is the remedy: I take paper of suitable kind and thickness, and coat one side with beeswax. Cut it in disks to fit in the jar-covers without falling out. I put the waxed side out, or so as to be next the jar. Put a rubber on the jar in the usual way; put this cover on, and screw down fairly tight. This disk seals the jar at the top, preventing any honey from running over the edge when tipped. This is the honey that creeps out, as it can not get back into the jar when once over the edge; and any thing that will seal the jar at the top is a cure.

The object of this letter is this: If you think the matter is of sufficient general interest or benefit for you to make these paper disks as an article of bee-supplies, do so. The greatest trouble is the coating of the paper and the cutting of the disks by hand.

N. P. SELDEN.

Belle Plaine, Iowa, March 21.

[We should be glad to make them if there should be a call for them; but the variety of styles of jars, as well as of sizes, would make it difficult to keep an assortment.—ED.]

HONEY-DEW; APHIDES AT THE VERY TOP OF THE TREE.

I have been reading what you say in the A B C book in regard to honey-dew; but we have a kind here that put me at a loss, and have had it for about ten days. What puzzles me the most is, we have had three of the hardest rains we have had for years, and the honey-dew comes just the same. This morning the trees were just soaking wet, but the bees were working as if on basswood. It is mostly on the red oak. It is of a very high color, but has the flavor of all honey-dew. It is an impossibility for one to find an insect of the kind you say always appears when there is honey-dew. I have been talking with three other bee-men, and they are having the same experience. Now, what I should like to know is, will this honey be fit to winter bees on?

E. EVELAND.

Barneveld, Wis., Sept. 18.

[The fact that you do not see the aphides or insects that secrete this honey-dew does not prove that they are not somewhere present in the tree, probably at the extreme top. By reading over the item on "Honey-dew" in the A B C of Bee Culture you will see that these insects are often at the very top of the trees. The saccharine exudation is thrown off in a spray, drops on the lower limbs, dries up, and, after a rain, is moistened up so that the bees can gather it. If you make a further investigation you will probably find the aphides at the very top of the trees. Generally honey-dew is an unfit winter food. Still, bees very often, yes, generally, winter on it well.

Later.—Since writing the foregoing, Mr. Eveland says he has been to the tops of the trees, and that there are no aphides there;

that the honey-dew he finds is a saccharine secretion from the buds. This is probably correct.—Ed.]

QUESTIONS ANSWERED FOR A CUBAN INQUIRER.

Before me lies a letter from a correspondent in Cauto, Cuba, under date of Aug. 19, wishing me to answer the following questions. Seeing your articles in Gleanings, he says:

1. Is it a good plan to feed from now on till the honey-flow, about October 1?

2. Would you advise me to go to the expense of getting full sheets of foundation, or having them made from starters?

3. What is the best thing to ship my honey in? Where can I get the best price for it?

4. Where can I get the best breeding queens?

I replied:

1. One should feed his bees from the time they commence until they meet the natural honey-flow. If feeding be shut down before the honey-flow comes, all the feed is lost.

2. By all means use full sheets of foundation every time. The poorer you are, the more foundation you can afford to use.

3. The best package for extracted honey is the white iron drums holding about 60 gallons each. This package is a new thing, and is as good as it is new, and is much safer for long rough shipments than any other package in the market, and is not injurious in the least to the honey. If your honey is a No. 1 article, and you are a heavy honey-producer, I would advise you to ship your honey to Hillworth & Co., New York. But your honey should be well ripened before shipping it.

4. You can get fine queens of The A. I. Root Co. C. E. Woodward.

Guanabana, Cuba.

MAMMOTH SUNFLOWERS FOR SHADE, AND SUNFLOWER SEED FOR CHICKENS.

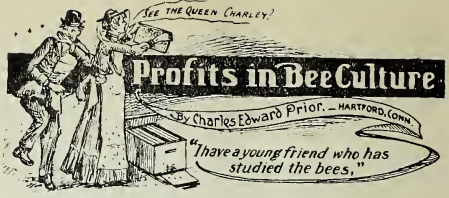
As a part of my bees are exposed to the sun, which is too hot for best results here in Colorado, I have planted mammoth sunflowers on the south side of each hive, and am very much pleased with them. Of course, I strip off the leaves up to the top of the hive. I also find the seed splendid for chickens. The variety I have had flowers last year that measured 19 inches across. I call them my umbrellas, which they very much resemble. W. C. Evans.

Fort Collins, Colo.

Is it an uncommon occurrence for bees to be broodless in September, located in North-central Ohio? All bees in this locality at present, and for the past three weeks, have been broodless. W. C. Haines.

McComb, Ohio, Sept. 26.

[It is not an uncommon occurrence for bees to be broodless in September; indeed, it is a normal condition.—Ed.]



I have a young friend who has studied the bees,
And can tell all about them with marvelous ease.
She talks of the workers, the drones, and the queens,
And you can't say of her that she "doesn't know beans,"
For she does; and whatever this girl hears or sees
Sets her tongue running fast on the subject of bees.

"There's a bee in her bonnet," I know by the sound,
For there's plenty of buzzing when she is around.
And she'll wax very eloquent, telling how *money*
Will roll in as soon as she markets her honey.
really believe she will meet with success,
And that I'd like to help her I'm free to confess.

A worker herself, she is bound to succeed
In the culture of bees; and 'twere folly indeed
To try to induce her to give up the scheme,
For she says, "I'm persuaded that this is no dream."
So she hums to herself (she is only ninteen),
And holds fast to her plan with the grace of a queen.

I wish she would notice that I'm not a drone,
And pity me, knowing that I live alone!
I will play "busy bee," keeping ever in sight
This sweet apiarist in whom I delight.
I'll buy her a comb; and after a spell
I'll arrange for her comfort a right royal cell.

Perhaps if a bad bee would sting her some day,
She would fly to my arms for protection, and stay.
If she doesn't, I'll wait till the swarming-time comes
When folks run about beating tin pans and drums,
And then I'll be certain to capture this queen,
To reign o'er my hive and make all things serene.

No good thing will he withhold from them that walk uprightly.—PSALM 84:11.

I presume almost every one of our readers has at times been startled by the recent wonderful achievements in science, in the arts, and in mechanics. When I was but a child people were talking and holding up their hands in astonishment at the advance of the locomotive. A little later one of my schoolmates said, "On the way to Akron there is a lot of folks putting up wires on poles. On top of the poles there is a cross-piece like the letter T, and some of the poles have two or three wires. What in the world are they for?"

Just one boy in the lot was able to explain that people talked through those wires; but his explanation was received with a shout of contempt. "Talking through a wire!" Then a general exclamation of derision followed, because of even the idea of any thing so ridiculous. A few years later, when I became crazy on electricity I went around to the schoolhouses showing a model of an electric engine operated by a battery, and I predicted that, in just a short time, say three or four years, electricity would supplant steam. Instead of three or four years, however, it took thirty or forty years. During this period there were various inventions and improvements in the lines of both electricity and steam. When the boy Edison began to startle the world I was full of interest and enthusiasm. At our prayer-meeting last Saturday afternoon our pastor said it was his belief the Holy Spirit was giving the world these great inventions; and he asked the question, "Does anybody know whether Edison is a professing Christian?" I said I believed he was not at the time of many of his great discoveries; but that, if I was correct, he married a devoted Christian woman, and soon after, probably through her influence, united with the church. Soon after, Marconi came with wireless telegraphy and startled the earth. Then Prof. Currie and his good wife (perhaps I ought to say Madam Currie and her *good husband*) gave to the world radium, startling and upsetting some established points held by the greatest scientists of the world. Well, we have not yet quite caught our breath since radium has come on the stage. We are waiting for the united scientists of the world to tell us what it is and what it is good for.

Now, then, is there a man or woman of average intelligence, and one who loves God, who has not been startled by these new and wonderful achievements? I should prefer to say *gifts* from God, and I presume a few, myself among the number, are beginning to believe that the great Father has some special purpose in this period of the world's history of opening his hand, and showering forth these new and precious gifts. I did not mention the telephone; but not a day passes that I do not start and almost tremble when I take in the fact that we are now talking to each other face to face, almost *oblivious* of distance. *What is coming next?*

This has been ringing in my ears for some time. I do not know how many other ears have caught on to that question or a similar one; but I think there must be a good many, especially those who love and reverence the great Ruler of this mighty universe, the loving Father, who perhaps also feels a thrill of gladness when we express to him our thanks, and recognize him as the great giver of all good. And now for our text.

Some may urge that these good things are, many of them, sent to those who do *not* walk uprightly; but may it not be true, dear brothers and sisters, that God thinks best to send his Holy Spirit just as he does the gentle rain, on the just and on the unjust? Yet it pains me all the same when I see the automobile mostly in the hands of those who recognize no God.

May be I am making a little mistake right here, and perhaps they *do* recognize God in some sort of fashion. But what hurts me most is that they seem to make no sort of recognition of his holy sabbath or his will concerning it.

Now just a word to those who say that great inventors are not all known as professing Christians. In my list I omitted the submarine cable; and while I recall it to mind (for I remember distinctly the years of hard work and almost a mint of money expended before it was a success) I remember with joy that Cyrus W. Field was a devoted Christian; and so were Morse and Franklin; and we should not forget Swammerdam, who knew so much about bees; and the list might be continued indefinitely. Well, friends, what *is* coming next? When somebody told me we were to shout so as to be heard across the ocean, I was startled again, and said to myself, "What *is* there in the future that *can* be more wonderful?" I need not tell you of the progress that has been made and is being made every day in more rapid transportation of individuals. For a long period a mile a minute was the desideratum; and when we got up to that there seemed to be a general agreement that it would not be safe to move human beings any faster; but the electric locomotive that I predicted in my boyhood has been getting in its work, and over in Germany they have already moved human beings at the rate of over *two* miles a minute; and just recently the automobile on a steel railway track has been covering long distances in a shorter time than either steam or electricity. A paper of this week announces that it is now possible for one to have breakfast in Chicago and supper in New York, and he can have both meals by daylight. But the automobile is the only "craft" that can do it just now.

I extract from the Cleveland *Leader* the following, which may suggest to you something of what I have in mind:

GREAT SPEED RECORDS.

On roads, on rails of steel and iron, in the water and in the air, man has strained body and mind to attain the highest possible rate of motion. He has used his mastery of nature's forces to transport himself from place to place in the shortest possible time. He has made engines driven by steam, by exploding gas, and by compressed air. He has harnessed the winds and chained the mysterious electric energy of the earth. He has run the gamut from small to great in the devices he has constructed to help him move faster than he can on his own unaided legs.

What has he accomplished? Up to date what are the limits of speed reached on land, in water, through the air? How much has he gained over the animals? Bees, marked with paint, have been released exactly a mile from their hives, and reached home in 58 or 59 seconds. Lake gulls have been timed accurately by dropping bread over the rail of a steamer and taking the exact second when they rise to catch up with the vessel as the start of their flight. They do a mile a minute easily. Frigate birds fly for hours faster than any gull. Some naturalists believe they can cross the Atlantic, from Brazil to Senegal, where the ocean is 1200 miles wide, in a single night. Many homing-pigeon records surpass a mile a minute, for distances ranging up to 300 miles and more. For 100 miles the rate of 88 miles an hour has been proved.

Water creatures are much slower; but dolphins and sharks keep up with ordinary ocean steamers easily, making side excursions about the vessels much as lively dogs do when out for a country stroll with a man. It is believed that salmon make spurts at the rate of 25 to 30 miles an hour in ascending rivers. In water, as on land, man was hopelessly behind many other creatures until he called wind, steam, gas, electricity, and endless ingenious mechanism to his aid. Now he is faster than any other animal on land and in the water, but the birds still beat him easily in their own element.

I have for many years known that bees can make a mile a minute; and in the experiment given I think they did this with a load one way, and without a load I think they fly considerably faster. The fact the carrier pigeons cover a distance as great as 300 miles, at a mile a minute, suggests what men will do when they get to navigating the air. The closing sentence of the above extract intimates that the birds still beat us in their own element; but I want to tell you that the bees and the birds both will have to be up and dusting if they keep out of our way.

Consider for a moment the great saving of stone roads, railway tracks, and grading, to say nothing of the *enormous* expense of bridges.* The cost of bridges alone in and near some of our great cities goes way up into the millions. When we fly through the air, muddy roads cut no figure, and the price of rubber can go down again, for rubber tires (puncture-proof, etc.) are not "in it." Our machines for carrying passengers can be finished up in the highest style of art, and they can be kept clean because they will never touch mud nor any thing muddy; and there will be no dust to speak of—that is, if we can induce the railways, automobiles, and horsedrawn vehicles to let up a little in "kicking up such clouds of dust" continually. We can go anywhere and everywhere whether they have a railroad or a macadam highway or not.

Fourteen years ago a friend showed me a periodical devoted to automobiles. I do not know that the name had been coined then. This periodical was termed *The Horseless Age*. At the time, it really seemed to me that a magazine like that, even though published monthly, would hardly be supported. It is now a weekly, and there are toward a dozen periodicals on this same subject, most of them weeklies. I am sorry to know, however, that the greater part of them are mostly devoted to the sporting and racing feature. I wonder if I am the first one in the world to suggest that we now need a periodical devoted to the navigation of the air. *The Horseless Age* was started before any thing had been done worth mentioning; and it greatly aided progress by posting people up and comparing notes. Let me tell you *why* it is needed. An inventor whom I have visited (he will not permit me to give his name here) is spending thousands of dollars in making an air-ship, and years of time, sometimes working day and night; and this inventor would stop wasting money if he knew what was going on in some other parts of the world. The papers tell us there are still other inventors, but they prefer to keep their plans secret because each man will have it that *he* is right and *all the rest* are wrong. If these men could have a convention, and would trust each other, not only would time and money be saved, and probably also precious lives, but the new development would make a great stride. Please, dear friends, do not imagine that I am talking about air-ships held aloft by great bulky unwieldy balloons. I hope the progressive world has got past that idea. Santos Dumont may astonish us with what he has done with a dirigible balloon; but this is not what we need at all. We want a machine that will float as easily and safely as the bees, the butterflies, and the carrier pigeons do; and, may the Lord be praised, it is already *in sight*.

*And, again, as an illustration of what good roads cost, or, rather what *bad* roads cost compared with not needing any roads at all, I submit the following, clipped from the Louisville *Courier-Journal:*

WHY FARMERS SHOULD ADVOCATE GOOD ROADS.

It is estimated that it costs the farmers $950,000,000 a year to move their products to the railway stations. The distances to be traversed vary greatly in different sections. The minimum average is four miles, in New Jersey. In Arizona the average is 60 miles, in Utah 38 miles, and in Wyoming 40 miles. In the Southern States the general average is about 10 miles. It is supposed to cost about 25 cents per ton to transport farm products a mile, and it is estimated that two-thirds of the present cost might be saved if good roads were universal. That means an annual saving of over $600,000,000 a year. Besides, the Agricultural Department estimates that the value of the farms would be increased to the extent of $5,000,000,000.

TEACHING A GRADED SPAN OF HORSES IN ONE LESSON OF ONLY THREE HOURS SO THEY WILL NEVERMORE BE AFRAID OF AUTOS.

Dear Sir:—I want to add my testimony to the ease with which almost any horse can be accustomed to automobiles. While I do not at present own one myself, I have ridden and driven a good many belonging to friends. I have a very spirited pair of driving horses, and they were both very much afraid of automobiles, whether the same were running or standing still. I got a friend of mine to bring his automobile out to my house, and it took me just three hours to teach them that there is nothing to fear, and they have never forgotten their lessons, and pay no more attention to automobiles they may meet on the road, or that may pass them on the road, which is a severer test. All they do now is to prick up their ears and watch them closely. I think I could now teach any horse to pay no attention to them in less than three hours.

Also allow me to add how very much interested I have been in each and every article you have written concerning automobiles, and I hope you will write many more on the same subject. I think Mr. Terry is mistaken when he says, "We farmers furnish the land and keep up the roads," at least that would not be exactly true of this State, as here the county owns the roads and expends the road taxes paid by every property-holder in the county, farmers included, on these roads. And in the first instance, the land taken up by the roads have been bought from each farmer when they were originally made, and he does *not* own that land any more, and can not raise crops on it nor run any fence across it, both of which he would surely be entitled to do did he own it.

Muses Bottom, W. Va. L. S. RAWLINSON.

While the above is putting it in a much shorter period than I would have done, I think the writer is pretty nearly right if not entirely so; and is it not a fact that it is just now dawning upon this great world of ours that horses may be educated to an extent that we have heretofore little dreamed of? See reports from across the ocean, and also exhibitions at the St. Louis exposition.

SOMETHING FROM "THE HORSE'S STANDPOINT."

Mr. Root:—We are much interested in your articles on automobiles. I wonder a little that nothing is ever written from the horse's standpoint. Does any one stop to think that the average horse has a rather hard time of it, and that great numbers of them have a very hard time? We live 20 miles from a railroad, and keep a horse; but I rejoice at each new indication that the auto is coming. A number of stages go in and out of this place each day. Teams of four or six horses are constantly going and coming with freight. The crack of the big whip is a common sound. All have mountains to climb. Often the driver does not use good judgment in handling his teams, and the strain comes doubly hard on some.

Throughout this State during the dry season, another great army of people are traveling. These are the campers. Among them, also, are many jaded ill-fed horses. They usually carry a heavy load of bedding, cooking-utensils, etc. I look at the weary horses, and rejoice to think that some day the automobile will relieve them. One who has never been in the mountains can not realize what climbing with loads is for horses.

Lakeport, Cal., Sept. 26. L. W. DENSMORE.

Many thanks, my good friend, for having put in a plea for better treatment for horses. If the advent of the automobile should relieve in even a small degree the horse as a beast of burden, I should rejoice. I have all my life (many times on these pages) protested against cruelty to and overloading the poor horses. If the automobile is going to bear the heavy burdens, and let the horses do the lighter work, and become more a companion to man rather than an abject slave, tortured and cruelly used at that, then we can rejoice. It is not uncommon to find horses that have more intelligence and good judgment in their line of work than the beast (in man's image) that drives and abuses them. On page 898, Sept. 15, one of the writers uses the expression, "your sweet-tempered Mrs. Root." I took the letter over and read it to her before it was put into print, and you should have heard her ringing laugh when she heard herself called "sweet-tempered." I think I shall have to confess that I put it in print without her permission; and when she saw it she was not exactly "sweet-tempered." She said in substance, it is not true; it never was true, and she feared it never would be true. Notwithstanding the above, I have my own opinion in regard to the matter. May be I am biased a little in her favor. But this is true: Whenever she sees a drunken man (or any *other* brute) beating a horse that is doing its very best, she is likely to show a peculiar trait that the world might not call "sweet-tempered." If a man wants to get mad at his auto, and abuse it while he is on a drunken spree, none of God's creatures are made to suffer. If he overtaxes it or abuses it in any way while he is in a fury, he must pay the penalty out of his own pocket.

LONG-RANGE WEATHER-PREDICTIONS, OR TELLING WHAT THE WEATHER WILL BE FOR A YEAR IN ADVANCE.

I feel it my duty to keep bringing this matter up so long as there are people who quote the fake weather-prophets. The following extract is from a recent issue of the Cleveland *Leader:*

"I will go on record with the statement that it is impossible to forecast the weather of ten successive days for a given locality on scientific principles. Any one pretending to do so is a humbug in the fullest sense of the word, and can be proved so in every instance."

The statement quoted above was made yesterday by Father Odenbach, of St. Ignatius' College, who, with Forecaster Kenealy, has just returned from the third convention of Weather Bureau officials held at Peoria, Ill., last week under the authority of the Secretary of Agriculture.

Father Odenbach, who is recognized as one of the country's greatest experts on meteorological subjects, also attended the convention of the officials held three years ago at Milwaukee. Such statements as "There will be storms in the period of the 20th to the 27th of September," without mentioning a special day or designating a single State, to say nothing of a county or a single city, are easily made, and any schoolboy has a formula by which he may give the percentage of possibilities for guessing correctly. It is guessing, and nothing more. It is unpardonable in a modern newspaper to cram its pages with lies, nonsense, and productions of ignorant, eccentric, or dishonest fakers. To give them a chance is a menace to the public and a crying injustice to a set of men that are the pride of the intellectual portion of the American people commanding the highest esteem of European scientists of all nationalities. We Americans pride ourselves on the strength of our scientific schools and intellectual advances generally. The weather-prophet fad is certainly a manifestation in the contrary direction. Any man talking seriously of these quacks is set down in my mind as deplorably ignorant, at least as regards meteorological science. The same may be said for the charlatans themselves, though I would give them the alternative of being ignorant or dishonest.

I might mention here that the Weather Bureau has published quite a good-sized book or pamphlet giving an account of the most careful observations made for years past, and all over the world, to determine whether our moon or any of the planets affect the weather. The decision is most emphatic, and you can set it down that the man who attempts to tell you the moon has any influence whatever on the weather is either ignorant or dishonest. I can forgive him for being ignorant; but the dishonest man who robs the people of their hard earnings by his almanac should be relegated to the place where all liars will some time congregate.

See the last paragraph in my extract above.

Since the above was in type I find an editorial by Willis L. Moore, Chief of the Weather Bureau, in the *Monthly Weather Review*, entitled "Fake Forecasts." From this I make the following brief extracts:

So far as we recall the names of those who have distinguished themselves for making popular weather predictions based on principles that are contrary to all our knowledge of meteorology, the list runs somewhat as follows: Vennor, 1875-1890; Hicks, 1890 to date; Dunne, 1892 to date; Foster, 1885 to date; Elmer, 1903 to date; Snavely, 1902-1904. While these have been active in the United States, the rest of the world has also had its varied experiences. In England, Mr. Hugh Clements and his great expounder, Hon. William Digby, have vexed the printer with an imposing volume and the public with daily predictions in the local newspapers. These authors speak as confidently about the moon as Rev. Mr. Hicks does about Vulcan, Jupiter, and the other planets, real and imaginary. Italy and Austria have gone through a sad experience with vortex-ring cannons for driving away hail.

Wherever the life and property of the citizens are at stake, the Government of the people, by the people, and for the poople must necessarily look after their interests, and the time must soon come when a general law shall forbid the publication of weather predictions and storm warnings, especially those of a sensational character, by any others than properly licensed persons.

"HIGH-PRESSURE" STRAWBERRY-GROWING.

Mr. Root:—After carefully reading your A B C of Strawberry Culture I have decided to try my hand at strawberries. Three years ago I planted some after having just turned a heavy sod, with the result that the large white grubs ate off the roots, and the plants died. Now, we have only about seven acres in all, only four of which are available for a cultivated crop. We have one-half acre in early potatoes. When these are off I intend planting strawberries there, putting them close in single or even double rows, say nine inches to a foot in the row; keep off all runners, get a crop of strawberries next spring, then plow plants under and plant a late crop, say late cabbage. Please give your opinion of the plan. I realize that this is intensive culture, but that is what we have to resort to. The increased price for the greater number of strawberry-plants needed will, I think, make no perceptible difference, as we shall get three crops off the land in two years.

I forgot to state that our soil and climate fully warrant this venture in strawberries. We are within six miles of Milwaukee, with 300,000 people (a good market for a good product). ARTHUR P. LOEWE.

Milwaukee, Wis., July 9, 1904.

Your plan of strawberries after early potatoes is all right. The finest strawberries I ever grew were managed in this way; but I should not think of planting as close as you do; 20 inches, or, better still, two feet, is none too far for hill culture; but I would not think of plowing them up after they had grown one crop. You might get a very good crop the first summer after the potatoes, but you will get a much better one if you keep the runners off and grow one year more. It is so much work to fix a strawberry plantation just right, it generally pays to get another crop. If, however, you decide on just one crop, perhaps your close planting will be all right, providing your land is very rich, and in this way you will save laborious weeding. The big city you mention is quite an item in the matter. Under such circumstances you can afford to put a lot of work and a lot of manure also on a small piece of ground.

Humbugs and Swindles.

THOMAS A. EDISON, JR.'S, ELECTRIC VITALIZER.

More than a year ago I received a flaming pamphlet saying that the son of Edison, the inventor, had just gotten out something for the cure of sick people more wonderful, and of more value to the world, than any thing his illustrious father had given. I was pained and surprised at the news that Edison should in any way let his good and great name be used in support of a humbug. I asked for particulars, and have been getting their printed matter ever since. I thought of the feelings of the father, but reasoned that he must know all about it, and agree to it. Among other things in the advertising matter was the following:

"Never has the truth of the law of heredity been so well illustrated as it has in the Edisons—father and son."

I felt sure that it was a fraud of some kind, but it never for a moment occurred to me young Edison was *not* actually at the bottom of it. Yet I could not understand why his greed for money should tempt him to use his father's good name in this way. In the Cleveland *Leader* of Oct. 6 we are told that the Postoffice Department has finally shut down on the whole thing. May the Lord be praised! Below is the explanation:

It was disclosed that Edison, Jr., was not the inventor; that, under the agreement he had with the company, he never received more than $35 a week, and that the company sold thousands of the vitalizers at $8 a set at a large profit.

Extravagant claims were made for young Edison's inventive genius. It was claimed he had refused an offer of $750,000 for the "vitalizer," and that the Japanese government was anxious to secure it for its troops in the field.

The elder Edison received hundreds of letters of inquiry about it. He then appealed to the authorities, and said, among other things:

"My son, who is named in the company's literature as a great inventor and medical authority, and in personal charge of the regulation of the vitalizers to the needs of individual cases, is a young man of no scientific or inventive attainments. He has never represented himself as such. The boy was gotten hold of solely for the use of his name."

Just think of it, friends. The truth of the matter is, a fake company paid young Edison $35.00 a week for the use of his name; they then went to work and wrote whatever they pleased, and put his name at the bottom of it. The only thing we can blame the Edisons for is for letting the thing go on till the present time, "robbing sick people" by the hundreds and perhaps by the thousands, using names and testimonials till our government finally put a stop to it. The apparatus is Electropoise over again, only there is in real fact a *little* electricity about it, while Electropoise has none and never did have. It must be a combination of Electropoise and cheek—the kind of cheek used by the Duffy Malt Whisky people. We are told young Edison is now seriously ill. It is a little strange that *he* should be sick when his own vitalizer was advertised with such vehemence to "cure *every thing*."